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The Present Day Study of the Pathological Gall-Bladder by Radiographic Means*

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Since Roentgen's discovery numerous attempts have been made to apply the *x*-ray as a diagnostic method to disease of the biliary system, but not until recently has satisfaction been attained. Reviewing the work done in this connection one notes in particular three distinct eras —the first was instituted as early as 1898, by Buxbaum, with the direct examination of the gall-bladder area demonstrating biliary calculi. Later, as the examination of the gastro-intestinal tract progressed, there were described, notably by George & Leonard, the effects of the diseased gall-bladder on the adjacent stomach and intestines; this constituted what has been referred to as the indirect evidence of gall-bladder pathology. The third and most important era was initiated in 1925 by Graham and his co-workers, by rendering the gall-bladder opaque to the ray by the intravenous injection of tetrabromphenolphthalein. Therefore, in attempting to evaluate the true rôle of the roentgen ray in the diagnosis of abnormality of the gall-bladder, it would be well to consider the part played by each of these methods; the direct, indirect and the cystographic.

The Direct Method consists essentially of the demonstration of the opaque gall-stone, that is of that group of stones which contain sufficient calcium directly to produce a shadow on the *x*-ray film; it is estimated that this type represents about forty per cent of all biliary calculi. The radiographic evidence of these calculi is so characteristic that error occurs very infrequently. Another finding by this method, calcification of the gall-bladder wall, though more uncommon is also very significant. The only other direct finding is the visualization of the gall-bladder on account of its inherent pathology. A few roentgenologists claim that certain pathology of the gall-bladder wall renders it directly demonstrable radiographically and hold that "a visualized gall-bladder is pathlogical." This dictum offers much opportunity for controversy but suffice it to say, that in light of recent studies definite diagnosis can not be made on this supposition.

The Indirect Method consists of the examination of the gastro-intestinal tract with the aid of the opaque meal in the search for first, pericholecystic adhesions, noted by the abnormal contour, position and fixation of the adjacent stomach, duodenum and colon. Second, a distended gall-bladder by pressure defect of the outline of these closely related organs; third, referred spasm of the stomach or duodenum secondary to cholecystitis. In the wall advanced case such findings may be anticipated but not without exception since the intrinsic pathology may not produce these particular effects and again, should such features be present they are not necessarily characteristic of gall-bladder disease. Consequently, this proves to be an unreliable diagnostic aid since gall-bladder disease cannot be definitely excluded in the absence of, nor can it be positively diagnosed in the presence of such findings; suggestive evidence only of a pathological gall-bladder can be obtained by this application.

* Read before the Society of Internal Medicine, January 25th, 1929.

Cholecystography represents the most satisfactory method of radiography of the biliary system yet devised. The test is actually one of function dependent upon the excretion of the opaque salt by the liver into the gall-bladder by way of the duct system.

Administration—Numerous salts have been used experimentally and of these the halogenated phthaleins, particularly the Na Salt of Tetraiodophenolphthalein, have served most satisfactorily. The oral and intravenous methods of administration are by far most popular; the dye has been given by rectum and by duodenal tube though these means do not lend themselves to common usage. The dose of the drug is estimated at 40 MG per KG of body weight though not more than 5 gm are given by mouth nor 3½ gms intravenously; unfortunately, the oral method is attended by the uncertainty of intestinal absorption and derangements of the alimentary tract may seriously interfere with its efficiency. Various methods of administration have been advised but more commonly, tetraiodide is taken about nine o'clock at least three hours after the evening meal; when utilized intravenously the injection may occur at the same hour but preferably in the early morning. The latter method of introduction of the drug into the system produces more certain results but entails the more delicate procedure. The rectal method, used experimentally by the writer has been satisfactory to a degree and has certain indications but further study to obtain a more suitable suspension medium is desired.

More recently Graham and his co-workers have utilized an isomer of the tetraiodophenolphthalein—the sodium salt of phenoltetraiodophthalein; the latter has the advantages of smaller dose necessary for cholecystography and of greater importance, the utilization of the same injection as a liver function test. These investigators are of the opinion that on account of the larger dose (40MG. per kg. of body wgt.) it serves more efficiently as a liver function test than do the dyes now used for this purpose. The maximum retention of the normal has been found to be 15 per cent at one-half hour and not over 4 per cent at one hour. Phenoltetraiodophthalein not only serves as a diagnostic aid and as a complement to cholecystography in determining the part played by the liver in the non-filled viscus, but also as an efficient means to determine the operative risk of the surgical gall-bladder case.

Reaction to the oral administration of the tetraiodide consists chiefly of various degrees of nausea, vomiting and diarrhoea, while chills and circulatory depression occasionally accompany intravenous injection. Less common symptoms are headache, temperature rise, abdominal pain. These reactions rarely reach a serious stage and are now witnessed much less frequently than during the early application of the test.

Normal response to tetraiodide administration—the gall-bladder is well filled four hours after the intravenous injection, although at the eight-hour interval the shadow is more dense and smaller due to further concentration (provided the patient has abstained from food). Concentration reaches its peak ordinarily at about twelve hours. To test the ability of the gall-bladder to evacuate its contents a high fat meal consisting of egg yolk and cream as suggested by Boyden is frequently employed and in one-half to eight hours it is completely emptied or reduced to about one-tenth its size; usually the evacuation is complete in two hours.

Such response constitutes what is commonly referred to as a negative test, one which presents no abnormality of function of the biliary system. For the production of the normal cystogram the following conditions are necessary:—

The liver must function at least to one-half its capacity.
The duct system must be unobstructed.
The gall-bladder must receive and concentrate its contents in a normal manner; the evacuating mechanism of this viscus must be intact.

Further, from the cystogram may be determined the size, position, distensibility and contractility of the organ. The uniform density of the shadow excludes calculi and its regular contour denotes absence of distorting adhesion and anomaly of the organ.

The abnormal response to the tetraiodide injection comprises one or several of the following features:—

Absence of gall-bladder shadow.
Faint gall-bladder shadow.
Delayed filling.
Delayed evacuation.
Contour irregularities and unusual position.
Irregular density of the shadow.

Absence of gall-bladder shadow may result from A—inability of the liver to excrete the dye. In this connection Whitaker has proven that dysfunction of the liver is a rare cause of non-visualization since cystograms have been produced in dogs after destruction of about one-half of this organ. B—obstructed duct system; interference to the flow of bile in the cystic or common duct produces a back flow and retention of concentrated bile in the gall-bladder prohibiting the entrance of the dye. C—pathological changes of the mucosa interfering with the function of concentration; the dye as it enters the gall-bladder being insufficiently dense to cast a shadow. D—pathological changes in the gall-bladder wall, interfering with evacuation as a result of which the bile is retained, thus prohibiting the entrance of the tetraiodide.

Faint gall-bladder shadow may result from any of the factors enumerated but indicates pathology of a less severe character. When this finding is definite it is to be considered as a valuable sign, but errors of administration technique, etc., are so frequently the cause that caution must be exercised before arriving at such decision.

Delayed filling of the gall-bladder has been offered as an abnormal sign, and is more commonly associated with the oral administration resulting from slow intestinal absorption; however, slight interference with function by the conditions noted may be the cause.

Delayed evacuation. The period of evacuation varies normally in different individuals and while a definite delay represents pathological changes in the gall-bladder wall Graham contends that if the cholecystogram is otherwise normal the gall-bladder must have satisfactorily evacuated its contents previously, to be able to receive the dye in sufficient amount and consequently the high fat meal is unnecessary; however, this meal is commonly employed to directly test the contractibility of the organ and aids in the search for calculi. Retarded gastric evacuation from any cause may likewise lead to delayed gall-bladder evacuation. Delayed intestinal absorption and reabsorption may account for a dye filled gall-bladder at a later date; one case of our series was noted to have a perfect cholecystogram at the gastro-intestinal examination, twenty-four hours after complete gall-bladder evacuation.

Contour Irregularities and Unusual Position—Non-visualization usually occurs in cases presenting marked pathology with pericholecystitic adhesions, consequently, evidence of adhesions is not so common on the film as noted surgically but occasionally the unusual contour and fixation of the gall-bladder indicate adhesions; anomalous

conditions may likewise be detected by study of the gall-bladder contour.

Irregular Density of Shadow—The normal cholecystogram is of uniform density but cholesterin stones when present, being non-opaque, contrast with the dye and produce a shadow of irregular density varying with the number and size of the calculi present. At this point, the importance of the preliminary film (before the teraiodide administration) must be stressed since stones of high calcium content may be obscured by the equally dense dye contained in the gall-bladder.

From this discussion it will be noted that cholecystography, unlike other methods of roentgen diagnosis, is not a direct demonstration of structural change but essentially a study of the physiology of the biliary system from which pathology may be inferred. To determine the efficiency of the test Graham analyzed the findings of 561 operated cases reported by various authors and found that a correct diagnosis of gall-bladder pathology had been reached in 97.8 per cent and of a normal gall-bladder in 74 per cent. Further analysis revealed the intravenous injection to be more accurate since correct diagnosis by this method occurred in 95 per cent as against 89 per cent by the oral route. The most common source of error was found in the pathological cases diagnosed by cholecystography as normal. In spite of this report of 93.8 per cent correct diagnosis in all cases, certain roentgenologists do not concede such a high degree of accuracy to the test and are of the opinion that it does not truly represent the present status of cholecystography.

Conditions Leading to False Conclusions—Cholecystography has to date been employed sufficiently for certain fallacies to be recognized; few among us have not experienced a surprise, or rather disappointment, at the operating table in finding a condition of the biliary system unsuspected after study of the cystogram; yet through this stage all new tests must pass.

Of prime importance in considering the limitations is the technical quality of the radiograph—a pathological result may be simulated by an examination improperly made; conclusions should not be drawn unless the roentgenogram presents the gall-bladder area in finest detail.

The more common sources of error may be grouped into two classes—those presenting a normal cholecystogram found pathological at operation and secondly those presenting an abnormal cystogram but without demonstrable pathology.

Concerning the former (normal function with gall-bladder pathology) it must be borne in mind that certain pathology of the gall-bladder even cholesterosis or resultant changes due to previous gall-bladder disease do not necessarily impair its function and in such event a normal appearing cholecystogram may be produced. This fact accounts for the chief discrepancy of the test.

The second group—the normal gall-bladder with evidence of altered function are more often caused by pathology of the stomach or duodenum, such conditions as ulcer and new growth of these organs being occasionally found with non-visualization of a normal gall-bladder; this, however, offers no serious obstacle, since gastric and duodenal pathology may be readily detected by gastro-intestinal study. Hyperchlorhydria and achlorhydria have been said to interfere with the results of cholecystography but, on the contrary, Lockwood and Skinner, who have made gastric analysis in over 1,000 of these cases, claim that neither of these conditions have any such effect.

Non-filling of the gall-bladder by tetraiodide has been found by Graham on numerous occasions in late pregnancy and the same author reports non-visualization in several cases of malignancy of the upper right quadrant with intact gall-bladder; he suggests the possibility of a lymphatic obstruction as the cause in the latter instance. Enlarged liver and jaundice of any cause usually precludes filling of the gall-bladder with dye.

Conclusions—The direct method of examination of the gall-bladder serves only in confirming or excluding gall-stones of sufficient calcium content to be radiopaque.

2—The indirect method offers but suggestive evidence of cholecystitis.

3—The radiographic diagnosis of gall-bladder disease has been enhanced markedly by the introduction of the Graham test.

4—Cholecystography has proven a valuable asset in the study of the physiology and pathology of the biliary system, but it must be looked upon as essentially a functional test.

5—An appreciation of the physiology involved is necessary for accurate interpretation; a normally functioning gall-bladder may be the seat of moderate pathology, therefore a negative test should not be considered final if abnormality is definitely indicated by other means.

6—A true positive test can in a very high percentage be considered as evidence of pathology, particularly if lesions of the gastro-intestinal tract are excluded; the positive test assumes greater value after intravenous administration.

116 Remsen Street.

Night Vision of Aviators

How much can a man see in the darkness of the night, and how long does it take him to become fully accommodated to the darkness? An answer to these questions is given by Surg. Lieut.-Col. P. J. E. Beyne and Surg.-Commander G. Worms, from the French Medico-Physiological Laboratory of Military Aviation, in the *Archives de Médecine Militaire* for last September (p. 231). They measured the vision of three aviators on a clear dark night in September, decided later, in a dark chamber, on the artificial illumination required to give the same vision—this they state as 0.0015 lux—and after many experiments declare the acuity of night vision to be 6/100 to 9/100 of what is considered normal by day. They found, too, that it lessens with age over 30, and that it does not reach its maximum until after 20-35 minutes in darkness. These figures are for Europeans; two natives of Tonkin both reached 10/100 in 25 minutes, an acuity greater than in any European examined. Night vision is, the investigators say, so important to aviators employed as night fliers or night bombers that they must be specially selected, attention being given both to the keenness of their night vision and the rapidity of its attainment. They further recommend that in night-flying aeroplanes the dials on the dashboard shall only be illuminated with red-purple lamps, the less to disturb the pilot's vision as he flies.—*The Lancet*, Feb. 9, 1929.

The Intranasal Application of Insulin

H. Wassermeyer and A. Schäfer have observed the effect on the blood-sugar in diabetics and in normal controls of insufflation of the nasal mucous membrane with a powder containing borax as a vehicle and varying quantities of insulin. Each powder of 25 to 30 mg. contained from 10 to 30 units of insulin. This powder was found to be quite non-irritant. Both in normal controls and in the diabetic cases a marked fall in blood-sugar took place within 2½ hours of the insufflation, thus proving that absorption from the mucous membrane of insulin had occurred. Drs. Wassermeyer and Schäfer do not suggest that this form of administration of insulin can replace that of subcutaneous injection, in severe cases of diabetes which call for constant supervision, but they think that it may have a useful application in the treatment of the milder ambulant forms of the disease in which patients are at present allowed to give themselves the injections. The substitution of an intranasal administration for the often painful needle prick would be welcomed by these patients, and suitable dosages could, with care, be readily determined.—(*Klinische Wochenschrift*, January 29, 1929, p. 210.)

"Concerning the Indications for Forceps"

With a Review of 1000 Forceps Deliveries

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To answer at all satisfactorily the question as to what shall constitute the indications for the use of the obstetric forceps, is, of course, a far larger task than can possibly be accomplished in the time at my disposal in this evening's program.*

There is, perhaps, no other demand upon the obstetrician that so completely tests his judgment and his general obstetric ability, as does this question of deciding when the forceps should be used—unless indeed it be the *use* of the forceps when the question *is* decided.

The reasons why this is so, are so obvious, that I need not stop to state them.

The indications for forceps must necessarily vary as widely as the varying degrees of training, and experience, and skill among physicians; as widely as the mental and physical types of patients vary; as widely as the circumstances and conditions and surroundings of labor vary.

One may make the matter extremely simple by stating a few arbitrary rules, or profoundly complex and comprehensive, by a painstaking study of every type of case, in all these varying relationships. Take, for instance, the broadly stated rule that, "the forceps is indicated whenever it is *apparent* that the woman will not be able to deliver *herself*". Very simple! But who *knows* whether she will be able to deliver herself? *Apparent* to *whom?* Forceps *may* be indicated. So may *version* or *Caesarean*, or perhaps better still, *narcotics* and *rest*, and much more time.

Who is *wise enough* to *decide?* What manner of test may be formulated that will safely *settle* the question, in any considerable number of cases?

Or, the forceps may be indicated, "whenever the child's *life* is endangered, or the *mother's*". *Again*, very simple in its statement, but often *far* from simple in its practical application. Who can say, *definitely*, that the child's life is in danger? Or that it is in *more* danger than it would be, were it subjected to a forceps delivery, *under the circumstances*—the latter phrase, it will be observed, is an extremely significant one, in this connection.

Certainly it is not *always* an easy matter for *any* physician, and especially for one of comparatively limited obstetric experience, to say when a woman has reached that point in her labor, where, *"under the circumstances"*, she would incur *less danger* to herself or her child from the use of the *forceps*, than from the further prolongation of her labor.

The circumstances and conditions surrounding labor, extend so *far*, and include so *much*, that the question of the indications for the forceps, is by *no means* a *simple* one to be answered by applying somebody's set of dogmatic rules of *hours* and *"waits* and measures."

Circumstances surely do alter cases, and *especially*, *obstetric* cases, and they most certainly alter our rules and indications for forceps. The experience and skill of the physician; the history and present mental and physical condition of the patient; the *place*—whether hospital or home; the availability of the necessary help and facilities, and the whole question of the *efficiency* of such assistants and facilities, *all* belong to the altering circumstances.

Even the matter of the *anaesthetic*, and the *anaesthetist*, is by no means an unimportant consideration, in deciding whether or not the forceps is to be used.

I have seen *death from chloroform*, while getting ready to apply the forceps, and *certainly* many a mother's life has been jeopardized *far more* by the necessary, but improperly administered *anaesthetic*, than it would have been from any amount of prolonged and difficult labor. Irreparable traumatism to the *mother*, and fatal injury to the *child*, have often resulted from attempts at forceps delivery, where the ordinary or so-called therapeutic indications for forceps were clearly present, but where the *personnel* and the necessary *facilities* for a successful issue, were *not* present. In most, if not all such cases, to have *humanely* made the labor *tolerable*, over a much longer period of time, would undoubtedly have been the safer alternative.

Of course, there *is* a *time limit* to the 2nd stage of labor, but it cannot be stated in *hours*. And there *are* positive indications for *forceps*, but they cannot be proclaimed *abstractly*, or made to apply non-personally.

The classic dictum that we should "wait to see what a woman is able to *accomplish*, rather than what she can *endure*", is, without doubt, a fundamental and guiding principle that should always be kept in mind. But the *question* is, who is he who waits and watches? By what obstetric yardstick does he measure *accomplishments?* Or what nervometer indicates to him the degree of individual *endurance?*

There *are* undoubtedly many complications and emergencies in the 2nd stage of labor, involving the safety of both mother and child, that indicate *immediate forceps delivery*, regardless of rules and regulations. And there are increasingly larger and larger numbers of women today, whose lack of *physical fitness*, and resultant insufficiency of the forces of labor, make the use of forceps highly advisable, if not absolutely necessary. And there are likewise increasingly larger numbers of women, where, under proper conditions, anaesthesia and forceps are indicated, purely to prevent unnecessary and poorly tolerated pain.

Since, therefore, this question is so largely a matter of individual experience, I have felt that it might be of some interest, and perhaps of some practical value, to review the indications for forceps, as one individual has found them—as I have seen them in some of my own experiences.

A brief review of 1000 consecutive forcepts deliveries may be summarized as follows:

Primiparae	597 or 60%
Multiparae	403 or 40%
High (at inlet)	71 or 7%
Low (at outlet)	410 or 41%
Midian (mid-pelvis)	519 or 52%
Positively indicated	262 or 26%
Doubtfully indicated (borderline and questionable)	308 or 31%
Unindicated (except to save pain and traumatism)	430 or 43%
Fault of the Forces	322 or 32%
Fault of the Pelvis	106 or 11%
Fault of the Child	63 or 6%
Incidental Complications	79 or 8%
Persistent Occipito-Posterior (Trimanually rotated)	360 or 36%
Perineotomy (Medio-lateral)	341 or 34%

* Symposium on Obstetrics, Logan Medical Society.

Perhaps it may be in order to comment briefly on these figures.

The relatively large number of multiparae here shown, may be accounted for, in two or three ways. In the first place, those of us who practice "early second stage delivery", believe that multiparae should be saved unnecessary suffering, as well as primiparae. Again, where a satisfactory perineotomy was done, at the first delivery, with anaesthesia of course; as *much*, at least, will be desired, and should be *given*, at subsequent deliveries. Then again, many of these patients were consultation cases, and therefore represent the complications and difficulties culled out and concentrated from widely scattered fields.

It is interesting to note the small number of so-called "high applications". This is significant, I think, from several viewpoints. I am satisfied that some years ago, a thousand forceps deliveries taken as they came—"the run of the crop"—would have shown a very much larger number of high and necessarily difficult and dangerous cases. There has evidently been encouraging advancement in our knowledge and science of obstetrics, if not in our art. There is no doubt that the standard of efficiency among those doing obstertic work to-day, is considerably higher than formerly. Two things, perhaps, account for this. There is much better obstetric training, *for those who want it*, than formerly, and fewer men busy with other work, are continuing to undertake what they know they have not the time and training to do well. Consequently, the general standard of obstetric judgment is higher, and fewer women are subjected to the errors of judgment which "high forceps" usually indicate.

And another very decided improvement in the conduct of labor, that has played no small part in cutting down the number of difficult forceps deliveries, is the more general use of approved methods of making *tolerable* the first stage of labor, and thereby giving the necessary *time* and continued effort required to secure full dilatation, with moulding and descent of the relatively large head.

Only seventy cases out of a thousand, therefore, requiring "*bad* obstetrics", reveals a decidedly encouraging advancement toward *good* obstetrics.

Naturally, one who practices "early 2nd stage delivery" would have a large percentage of mid-pelvic applications. These figures would seem to indicate that in more than half our cases (52 per cent), dilatation is not complete until the head has reached the pelvic cavity, and often (41 per cent) not until it is at the outlet.

Now, the groupings as to indications. The 26 per cent "positively indicated", I am sure, would not be questioned anywhere. They were those in whom every reasonable resource of labor had been tried unsuccessfully. Something *had* to be done—version, forceps, Caesarean. The *first* did not offer a safe solution to the problems presented by most of these cases, especially to one not particularly partial to this Potter-popularized procedure. The *last*, was contra-indicated or unjustified in practically all of this group. Forceps, therefore, *had* to be used.

The 31 per cent of borderline, or "doubtfully indicated" cases, were those whose outcome was questionable from the start. They were never clearly on one side or the other. There was no good reason, at once apparent, why they should not, in time, deliver normally, but there was likewise no reasonable assurance that they would. Undoubtedly most, if not all of them, would have used up more nerve energy, and incurred greater dangers and damages, in the prolonged test of labor that would have been necessary, than is justified in the light of present day methods and facilities. The "conditions" permitting forceps delivery are present, *now*. The positive indications are not, but *may* be after hours of mental and physical exhaustion. Why not spare this exhaustion, even at the risk of a few unnecessary, but relatively safe, forceps deliveries?

Then, the so-called "unindicated" class, the largest group of all. This, of course, is where I have subjected myself to the censure of all duly cautions and conservative obstetricians. More than 400 forceps deliveries out of a thousand, that would undoubtedly have been unnecessary, if even a *reasonable* length of time had been given for the second stage of labor! Surely that is not to be passed over without criticism. And I am willing to take the gaff—*for my patients' sakes*, if for no other reasons.

No question about the spontaneous delivery of *all* of these patients, in time, and with many of them, not a great deal of time, at that! Then why interfere? Why not let labor take its safe and certain course? Only one good reason that I know, and that is, that present day obstetric knowledge and skill, backed by years of training and experience, and aided by the most approved safeguards and facilities of the modern maternity hospital, have made it possible and entirely practicable to deliver a very large percentage of women without any of the suffering, and with but little of the traumatism of the second stage of labor.

Surely this is a "consummation devoutly to be desired" —by most *women*, at least, and by their physicians as well, if they may feel the entire safety of such a procedure. And that they *may*, our very low percentage of morbidity assures us. "But", some one will say, "all this is expensive—it *costs* too much." In "cash on delivery," *yes*, unfortunately it does. But in the "deferred payments" of conserved energy and peace of mind, of protected pelvic structure and function, and of lessened traumatism to infant brains, really, *does* it?

I grouping these cases as to the *cause* of their failure to deliver normally, I have simply tried to be as accurate as I could in assigning the chief, or predominating cause-element in each case. Of course, you will readily understand that in many, if not in most instances, it is impossible to clearly and definitely pick out any one fault as the sole source of failure. This classification, therefore, must be largely a matter of opinion or individual judgment and evaluation. These figures, while covering but a relatively small number of cases, (570 of the "positively" and "doubtfully" indicated), and that too, in but one man's experience, would seem to confirm the generally accepted opinion on this point, namely, that the *failure of the forces* is by far the largest hindering factor in present day labor. 32 per cent from this cause, against 25 per cent from all other causes combined, is perhaps a fair figure for failure of the forces, although some observers hold it as high as 75 per cent.

It might be interesting to philosophize on this point, and especially in its relations to the influence of modern civilization on the "female of the species", and of all of this, on the outlook for the future of the reproductive process. But my time is up, and if this very incomplete presentation has succeeded in raising some practical questions for discussion, it will have met the purpose of your program.

4149 N. Broad Street.

A Simple Treatment for Restlessness and Insomnia

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The treatment here desecribed is directed to lessening mental activity. The attention is concentrated on the maintenance of certain muscular acts, so that the brain cells occupied in thinking, being deprived of the stimulating spotlight of the attention, more easily subside into the quiescence necessary for mental relaxation and sleep. The muscular acts selected for the purpose of thus distracting the attention from the thinking cells of the brain to the cells controlling muscular action are of a character favorable to muscular relaxation and sleep: the muscular acts involved do not disturb the body as a whole: the body can remain prone and muscularly relaxed for the most part during the performance. These muscular acts, which are distinct and are performed simultaneously, are four in number, viz.:

Elevation of the corners of the mouth, as in smiling.

Breathing somewhat more slowly and deeply than usual.

Closure of the eyelids.

Elevation of the eyeballs to a slight degree.

These acts are kept up without intermission, and their performance being without disturbance of the body as a whole, mental and physical relaxation and sleep can cause their spontaneous cessation without shock.

The modus operandi of this treatment is psychological. It is difficult to keep up the coordinated muscular contractions required by the four acts described, simultaneously and continuously for any length of time, and think of other things.

1218 Pacific Street.

Otitic Brain Abscess: Diagnosis and Treatment*

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Brain localization insofar as abscesses are concerned still leaves us in doubt and at times almost in utter darkness as to the exact locality of these formations. In spite of this broad assertion we are not without considerable knowledge of some well-recognized diagnostic signs indicating the location of these abscesses.

The great majority of all brain abscesses occur as a complication of diseases of the temporal bone or of the nasal accessory sinuses, and of these a much larger proportion develop from the former. From 85 per cent to 90 per cent of these abscesses occur secondary to chronic suppurative aural disease, and most frequently in the presence of cholesteatoma. In my own experience, brain abscesses, otitic in origin, involving the cerebrum, occur about three times as often as those involving the cerebellum.

It is uniformly recognized that abscess of the brain is always infective in character and that this infection is invariably extracranial in origin. Considerable immunity to infective penetration involving the cerebral structure is observed in acute aural disease, from the fact that the osseous structure and its mucosal lining are intact and offer an effective barrier in most instances to the entrance of pathogenic organisms.

The protective mucous membrane, in the chronic form, is frequently destroyed or undergoes pathologic changes which negative its functional activity, thus depriving the underlying bone of its only means of defence against the ravages of the various microörganisms. This favors intracranial complications and is the chief reason why abscess of the brain is so much more common in chronic than in acute otitis media; furthermore, it is one of the many reasons why we should, in one way or another, relieve a wholly preventable disease—chronic otorrhea—and cease undue procrastination about it.

In the average case it is quite evident where the infection enters through the osseous structure by means of thrombi carried by the smaller branches of the vessels which supply the various parts of the brain. Before erosion has actually occurred the bone becomes dark in color and quite thin. This is not only true in a brain abscess but is also an important point in the development of both meningitis and sinus thrombosis. When this process is rather slow in forming, nature will usually throw out a protective coat of granulation tissue and thoroughly wall off the process so that it does not advance any farther than the dura itself. In the one instance this condition is known as an extradural abscess, or, as some prefer, an external pachy-meningitis; in the other, a perisinous abscess. Both of these conditions are met so frequently during a mastoid operation and are so unexpected on account of lack of symptoms, that we often wonder why they do not more often produce an actual intracranial complication, in spite of nature's effort to prevent it. If, therefore, during a mastoid operation the tegmen antri or tegmen tympani, or the bony wall covering the sinus, appears to be soft or discolored, this should be removed to provide for drainage. It is very important, however, in order to prevent extension of the process, that the protection provided by nature shall not be disturbed. I personally believe it unwise to meddle with this granulation tissue in the absence of symptoms, even though it may be very exuberant.

Sometimes the osseous wall is neither discolored nor softened and yet the patient gives evidence of an intracranial lesion. In such instances the infection must extend through the numerous very small vessels penetrating the bone, carrying the infection to the interior of the skull, or it may be conveyed by means of the perivascular sheath.

The chronic form of brain abscess is usually encapsulated, which represents nature's effort to prevent an extension of the process. It may exist, under certain circumstances, for many months or even some years, without causing symptoms indicative of its presence. If an abscess is located in the right temporosphenoidal lobe there may be an entire absence of characteristic symp-

* Read before a meeting of the Councillors of the Medical Society of the State of Penna., at Huntingdon, Pa., May 28, 1929. A pathetic interest attaches to this paper, for Dr Smith ceased his earthly labors only the other day, after a distinguished career as otologist, surgeon, author, and professor in the Jefferson Medical College.—*Editor.*

toms, though its size be considerable. On the other hand, when situated in the left temporosphenoidal lobe, even a very small abscess will cause some defect in speech at least, though other symptoms be lacking.

One very striking difference between an acute and a chronic abscess is that in the former the pus is relatively thick, mixed with brain tissue which has not yet had time to become sufficiently disorganized to form actual pus, and is usually non-offensive and not encapsulated, whereas in the chronic form the abscess is generally encapsulated and the pus is greenish and foul-smelling, often resembling the characteristic odor of the colon bacillus, although any type of bacteria may be present. If the diplococcus predominates in a chronic otorrhea, as has been pointed out by Neumann, a capsule is to be expected.

Although some focus of infection, such as a discharge from the tympanic cavity, is observed in the acute cases, I wish to repeat the observation to which I have frequently called attention before, that in my own experience intracranial complications of all kinds, and especially brain abscess, have occurred much more frequently in those cases of chronic otorrhea which were of a recurrent type—i.e., where the disharge and all symptoms have subsided for a brief period or up to several years. It is usually during or following an acute exacerbation of a chronic otorrhea that symptoms of an intracranial lesion develop. I have observed not infrequently, during a radical mastoid operation for the cure of a chronic otorrhea, a discharge coming from the temporosphenoidal lobe which had not given any indication of its presence prior to operation. In these cases the tegmen antri has been absorbed, the discharge escaping through a well-organized stalk, the dura being walled off and adherent to the adjacent bone, thus preventing an inflammatory extension.

The symptoms of brain abscess are quite typical when no other intracranial complication is present. Atypical symptoms are usually the result of a complicating meningitis or sinus thrombosis. If meningitis is present there will be increase in temperature, pulse and respiration without excessively marked variations. The patient's mental and nervous condition will change more rapidly than in uncomplicated brain abscess. On the other hand, if the sinus is involved the picture changes very radically. There is not only an increase in pulse, respiration and temperature, but the latter becomes of the pump-handle variety, indicative of septicemia. A positive blood culture is helpful in such cases but when absent it does not necessarily mean that the sinus is not involved. The manometer readings are very valuable when an obstructive clot is present but they are not always reliable from the fact that there may be a mural clot, which permits a continuation of the circulation and therefore negatives this test.

Illustrative of atypical symptoms, in a recent case the patient was stuporous and had a considerable increase in temperature, pulse and respiration. The spinal fluid, being under slight pressure, was cloudy and showed a large increase in the cell count but still reacted to sugar. The following day, on account of a paralysis on the opposite side, the temporosphenoidal lobe was explored and an abscess evacuated. This patient had suffered from a more or less severe headache, according to the history, for some time prior to admission to the hospital, but at no time was it over the site of the abscess. While headache is a constant and important diagnostic symptom, its location is not necessarily indicative of the site of the abscess, although it is true that it would more frequently be found in this region.

In the typical type of brain abscess, pulse, temperature and respiration are usually below normal, with a rise at some time in the twenty-four hours to, or just above, normal. There is one very significant point to which I wish to call your attention, which was pointed out by Sir William Macewen, to the effect that at times you will have a considerable rise in temperature with a very definitely slow pulse.

Vomiting, either of the projectile type or with nausea, is a typical symptom, as are also chills, particularly chilly sensations. In one case in which I opened three abscesses in different parts of the brain, complicating a chronic otorrhea of some years' duration, the patient had severe chills which lasted about fifteen minutes, with projectile vomiting, before each operation. In this case rotary nystagmus toward the affected side was a notable symptom. In other instances nausea precedes vomiting.

It is presumed that the decrease in temperature, pulse and respiration is due to intracranial pressure, and yet we must recognize an abscess formation the size of which is determined only by the amount of disorganized brain tissue and it does not, therefore, cause intracranial pressure. This type of abscess is necessarily more difficult to diagnose.

In arriving at a reasonably accurate diagnosis of brain abscess, a detailed history is most necessary. If, during the course of a chronic otorrhea the patient becomes somewhat irritable, complains of even slight headache, nausea or vomiting, and the discharge materially lessens or stops altogether, one should suspect the presence of a brain abscess. If later on there are chilly sensations or actual rigors, together with a low temperature and slow pulse and respiration, and especially if there are convulsions, the diagnosis is almost assured. My experience prompts me to regard convulsions as one of the most important symptoms indicating an abscess of the brain, particularly in children.

Again, complicating or following one of the infectious diseases, if the patient suffers from headache, more or less mental apathy, low temperature, and slow pulse and respiration, and more especially if this picture is accompanied by ocular changes, the presence of a brain abscess is probable. If these symptoms are found during the course of a chronic otorrhea, particularly in the presence of cholesteatoma, a brain abscess is to be expected. As an early symptom, mental apathy is only secondary in importance to pain; later the patient becomes more or less drowsy and answers questions with hesitation. As the disease progresses, mental apathy increases, followed by stupor, semi-consciousness, and finally complete coma. Respiration is not only slow when the cerebellum is involved, but is also very irregular, while in cerebral abscess it is more nearly regular.

While no hard and fast rules can be laid down as to the value of a complete blood examination, generally speaking we know that an increase in the leucocytosis represents the patient's resistance to the disease, whereas an increase in the polymorphonuclear percentage indicates the severity of the infection. In other words, if the increase in the polymorphonuclear percentage is offset by a corresponding increase in the leucocytosis, the picture is not necessarily disturbing; on the contrary, if the leucocytes do not increase to counteract the rising polymorphonuclear percentage the picture has very evidently changed for the worse. Per contra, a falling polymorphonuclear percentage will frequently indicate a turn for betterment which might not otherwise be noticeable.

Both the polymorphonuclear percentage and the leucocytosis are lower in brain abscess and sinus thrombosis than in meningitis, the average leucocytosis being about 15,000 to 16,000 and the polymorphonuclear per-

centage about eighty in the former, while in meningitis the leucocytosis runs as high as 42,000 and the polymorphonuclear percentage about ninety-six. It must be remembered, however, that all three complications above mentioned may be of a very serious type and yet present a blood picture not markedly abnormal.

Not infrequently occipital headache is complained of by patients suffering from an abscess of the temporosphenoidal lobe, whereas frontal headache is not uncommon when the cerebellum is the site of the abscess. Pain is one of our most valuable and consistent symptoms and yet it may be quite intermittent.

Aphasia is a symptom of considerable diagnostic value. It has been pointed out that if this develops in the presence of a chronic otorrhea of the left side, and the patient is right-handed, it is reasonable to suspect pus in the temporosphenoidal lobe. In the amnesic variety the patient is able to recognize various objects held before him but is unable to name them, although quite conversant with their names and use, but if told the name he can repeat it. This symptom is valuable and shows a lesion of the temporosphenoidal lobe and indicates with almost certainty the location of the abscess in the left temporal lobe.

In temporosphenoidal abscess, when paralysis is present it involves the opposite side, while in cerebellar abscess it is on the same side, as is also over-pointing and rotary nystagmus toward the affected side, the latter becoming more marked as the disease advances, together with conjugate deviation of the eyes to the opposite side.

Facial palsy is more apt to accompany cerebellar than cerebral abscess, due to pressure on the pons. When it occurs in temporosphenoidal abscess it is due to involvement of the tympanic branch of the facial as it passes through the middle ear.

Complicating a chronic otorrhea, if the labyrinth on the same side is inactive, and nystagmus, especially if rotary in type, is directed toward the affected side, with slow pulse and subnormal temperature, the cerebellum should be explored. Barany is of the belief, and indeed lays much stress on the fact, that if there is rotary nystagmus toward the affected side and no longer any irritability of the labyrinth, one may be reasonably sure of the existence of a cerebellar abscess provided the patient has a low temperature and a slow pulse. As a cerebellar abscess progresses rotary nystagmus develops toward the affected side, but if the pons is more affected on the side of the abscess the paralysis will be on the opposite side.

Staggering gait is usually characteristic of cerebellar abscess. Temperature and pulse are more likely to be influenced, also, and there is apt to be a greater degree of nausea, vomiting and vertigo.

Babinski has pointed out that in the performance of pronation and supination the patient has more difficulty in moving the hand of the affected side in cerebellar abscess.

Changes in the eyeground may or may not be present. Their presence is favored according to the advanced stage of the disease, its location, and the increased size of the abscess. They are more common when the lesion is situated below the tentorium, but may occur also in a cerebral abscess, even though there may be only a slight injection of the retinal vessels.

To illustrate the difficulty of brain abscess localization at times, I wish to briefly state the history of a patient who came under my service a while ago. On account of more or less market apathy, slow cerebration and a change from a lively disposition to one very definitely morose, we felt sure that this patient suffered from a brain abscess. Headache was continuous and within a short time the patient gave slight symptoms of intracranial pressure, although nothing definite in the form of paralysis developed. This picture complicated a chronic otorrhea of the right side. It was reasonable, therefore, that we should explore the right temporal lobe but we failed to find any pus. Nevertheless, the patient's condition markedly improved for a time and then rather suddenly the symptoms above enumerated returned. The pain became localized at this time and was confined to the left temporal region, and the neurologists felt that there was slight evidence of a beginning palsy of the right side. We then explored the left temporal lobe without finding an abscess. Following this second operation it looked as though the patient would recover, as the improvement was in every way quite marked for a period of over two weeks, when suddenly rotary nystagmus toward the left developed, together with definite ataxic symptoms, the patient dying of respiratory paralysis before further surgical aid could be given. Fortunately, we were able to get an autopsy and found an abscess of the left cerebellum. I had associated with me some of the best medical, surgical and neurological talent obtainable, and yet the symptoms were so vague until the terminal stage that it was impossible to locate the lesion.

In the absence of localizing symptoms, one should first explore the temporal lobe of the same side as the aural lesion, from the fact that most abscesses of otitic origin are found there. Failing in this procedure, the cerebellum of the same side should be explored.

Most temporosphenoidal abscesses are caused by direct extension from the site of the disease. This is one important reason why, in operating, we should follow the avenue of infection, which also provides for very much better drainage than an opening made higher up.

Treatment

It must be remembered that otitic brain abscess is essentially a surgical disease, as are, indeed, all major aural complications. My first enjoinder is, therefore, never to temporize. In some cases it is better for the surgeon, as well as the patient, to be content with plain, frank probabilities, rather than allow procrastination to delay operative intervention until a positive diagnosis is established, from the fact that precise or exact localization is impossible at times and the patient will almost assuredly succumb to some additional complication if indecision is prolonged.

After the presence of a brain abscess is reasonably assured, the localizing symptoms above enumerated, although very incomplete, should give a pretty good idea of its situation. This being so, the operation for its evacuation should be proceeded with at once, absolutely without further delay.

Even *in extremis* intervention is called for, since the symptomatology may be due to intracranial pressure alone, which evacuation will assuredly relieve. Under the circumstances it will be seen that any line of care other than surgical is not only useless but dangerous, so that any medical or local treatment, such as sedatives, leeches, blisters, etc., has no curative effect; sedatives are useful to relieve suffering, but should not be given in sufficient dosage to mask symptoms. I believe it was the elder Gross who proclaimed, "Wherever there is pus, leave it out." This wise pronouncement is just as valuable today as when first given to the profession, and is especially applicable to abscesses within the interior of the skull.

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Imhotep*

The Reputed First Physician and Egyptian God of Medicine.

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There are few names in the history of Ancient Egypt that have excited such interest or controversy as the mysterious wise man Imhotep, certainly none have enjoyed the rare distinction of apotheosis some 2,500 years after death, and again after another similar period has elapsed; also a rare distinction is conferred on him and artistically commemorated at the present scientific Congress.

To inquire fully into the attributes of this wise and learned personage would be quite impossible in the time allowed me. He has been represented as Kheri-heb, or Chief Lector Priest, Vizier, Scribe and Sage, Architect, Astronomer, Astrologer and Alchemist and Magician Physician.

The office of Chief Lector Priest was one of the greatest importance. He was responsible not only for the welfare and happiness of the living, but also of the dead in their wanderings in the nether world. As Vizier he is represented as occupying a position of power and dignity, and his name is prominently associated with the legend of the seven years' famine during the reign of Zoser. As Sage and Scribe his reputation has long endured, and before the scribe dipped his pen in the ink jar it has been customary for him to pour out a few drops as a libation to Imhotep. But, although he was the alleged teacher of the religious mysteries and the reputed author of the Book of Wisdom and Wise Proverbs, it is unfortunate that none of his literary efforts survive, although the Sages Kegemni and Ptahotep, who were almost contemporaries, bequeathed to us valuable literary treasures which reflect high ideals on religion and morals of that remote period. The name Imhotep is coupled with Herutataf in the famous "Song of the Harper," where the diners at banquets—according to Herodotus—were encouraged to "eat, drink and be merry, for to-morrow you die," but it is not easy to reconcile this ancient priest and sage with the philosophy of that poem, and another singular circumstance in connection with it is, that Herutataf, who was the son of King Cheops, was the editor or author of certain chapters of the Book of the Dead and lived later than Imhotep. Yet the latter's name is not mentioned, nor is it mentioned in the Theban Recession of the Book of the Dead.

As an Architect Imhotep has enjoyed a great reputation. He is said to have designed the well-known step Pyramid at Sakkara, considered to be the oldest dressed stone building in the world.

The original temple at Edfu is also ascribed to Imhotep, and is constructed according to plans dropped down from heaven, and the priest when rebuilding under the Ptolemys claimed to be reproducing the building after the original plans. This is the only monument—according to Naville—that contains the signature of the architect.

In the later Hermetic literature, Imhotep is credited with special knowledge in Astronomy and Astrology, but as no special observations are attributed to him it must be concluded that his associations with Thoth in astronomical investigations—according to Sethe—was fruitless in results.

However, while admitting that the study of Imhotep in the many aspects presented to us is of singular interest, we are now only concerned with the claim submitted on his behalf not only as a distinguished physician, but as the first figure of a physician to stand out clearly from the mists of antiquity. It will assist us in our estimate if we inquire into his parentage, the general trend of medical knowledge and education of the period, as well as the medical accomplishments of this picturesque legendary figure. On the human side it is alleged that his father was named Knofer (the first architect), his mother Khrednoukh, and his wife Roupe Nofert. At a later period when deification was considered to necessitate a divine father, Ptah the great god of Memphis was assigned to him instead of his human father; also the divine mother Sekhmet, according to some authorities, instead of his human mother. In this way he became a member of the great Memphite triad Ptah, Sekhmet and Imhotep.

Subsequently he appears to have supplanted Nefertem, the other son of Ptah by, it is generally admitted, the goddess Sekhmet.

There were still further complications in the family tree. A soi-disant descendant named Khnum-it-re, while quarrying stones in the neighborhood of the Red Sea at the period when Imhotep was deified—and no doubt very much talked about—discovered to his own satisfaction as well as that of some learned Egyptologists that he was a direct descendant of Imhotep, inscribing on the rocks in the quarry no fewer than 25 architects in succession as a proof (the scientific value of such evidence must be left to the sagacity of Egyptologists).

Before leaving the parentage of Imhotep it may be of interest to point out the connections between another illustrious semi-mythical figure, Aesculapius, and the Egyptian god of Medicine. As son of Apollo the sun god, the most ancient medical divinity of Greece, he descended in direct line from Amon-Ra of the Egyptians, who also personified the sun, showing that in those early days the potential value of the sun's rays or heliotherapy was fully recognized. Both with time lost their hypothetical human character and were deified as gods of medicine.

In Ancient Egypt there were many medical schools, the chief of which were at Sais and On, now Heliopolis. At Sais, in the Delta, the school flourished at a very early period, and according to Breasted was the oldest state establishment for the teaching of medicine known to the history of science. The Dean, Ur Swnn, a title meaning great one of the physicians ("the greatest of the physicians"), was also known as chief priest of Neith, the local goddess. At On, where Moses studied and was initiated into the mysteries, the priestly title was the "Great Seer," and one of its first physicians, called the greatest of the Seers, is mentioned in the Ebers Medical Papyrus. There is no indication of the nature of the curriculum, but that dissection was not practiced is certain. The dissection of the human body, which was identified with Osiris, was entirely against the religious convictions of the Ancient Egyptians, and indeed anything of that nature was regarded with abhorrence.

On the authority of Herodotus, there were more specialists than even to-day, but Maspero does not accept the extent of the subdivisions. There were specialists

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called Sem for the eye, internal and urinary affections, teeth and fractures, but the body of practitioners appear to have been divided into two main classes, viz., the physicians trained in the priestly schools, who obviously underwent a more systematic course of training, and the large body who preferred to cure by magic phrases, amulets and incantations.

The name Imhotep does not appear anywhere in connection with any particular school or line of treatment in the contemporary records. A distinguished Egyptologist has suggested that he was the inventor of castor oil, which could scarcely be considered sufficient ground for deification except perhaps by Fascisti who employ that valuable medicine with magical effects.

The omission is the more remarkable when it is considered that the names of many others are known who were from the very earliest period conspicuously associated with the practice of the healing art.

The mystery appears deeper when it is recalled, as already stated, that he not only supplanted the god Nefertem, his brother or step-brother, but also the powerful god Thoth, a member of the ancient divine family of Egypt. Thoth would appear to have great claims to be regarded as the Egyptian god of medicine. He undoubtedly, as Maspero points out, "revealed himself to man as the first magician, and he became in like manner for them the first physician and surgeon. . . . Not only did he give the words of power to Isis, but he was also scribe of the gods, the lord of the holy writings, the maker of the palette and ink jar and the possessor of all knowledge, human and divine." We are told that one of the spells to be recited over an amulet began:

"I am Thoth, the inventor and founder of medicine and letters; come to me those who are under the earth, rise up to me, the great spirit." He presided over exorcism, and, what is even of more importance, he looked after the dead patients' welfare in their difficult passage through the nether world. He was also very skilled as interpreter of dreams and thus laid the foundation of psychoanalysis.

In Egypt the scholar or scribe was accustomed to keep a statue to this great god in his study, but all his important functions were relegated at a later date to Imhotep.

Now at the time Thoth reigned as a supreme and powerful god there were many persons famous more or less for their medical knowledge and achievements, but the name of his successor does not appear among them. Very little is known about the first three dynasties from the actual remains, and practically all information is derived from the classical writings, more or less corrupted, from the Greek compilation of Manetho, or from a few papyri or monuments.

In the early dynasties, however, it should be emphasized that there are distinct references to kings and others who possessed special medical knowledge.

Athotis, the son of the first historic king, Menes, and also a physician, is mentioned in the Ebers Medical papyrus, and there were three kings of that name, the selection appears to have fallen on Teta. According to the stone table Abydos, he not only built the king's tower at Abydos, but also practised medicine and wrote a book on anatomy and the foundations of the body. He is credited with having written a book on medicine containing many prescriptions for the cure of diseases, especially leprosy. Manetho also states that he practised medicine and wrote anatomical books. The monuments are, however, almost wholly silent; mention is made of a very ancient book when Teta sat on the throne and also of a valuable receipt for making the hair grow.

Hesepte, another king of the First Dynasty, is also mentioned in the Berlin papyrus and a very important chapter relating to the heart—from the religious point of view—dates from the time of this king.

There is a passage in the Ebers papyrus which assigns the origin of one part of the work to the fifth king of the table of Abydos which says, "This is the beginning of a collection of receipts for curing leprosy. It was discovered in a very ancient papyrus enclosed in a very old writing case at the feet of the statue of the god Anubis in the town of Sochen at the time of the reign of his majesty—the defunct king Sapti. After his death it was brought to the defunt kind Senta on account of its wonderful value, and behold the book was placed again at the feet and well secured by the Scribe of the temple and the great physician Noferhotep, and this happened to the book at the going down of the sun."

This document of antiquity which Brugsch considers as of great importance contained also a childish description of the human body. The mention of the "great physician Noferhotep" as belonging to that period is of interest in connection with the present subject. Send, a Pharoah of the Eleventh Dynasty, is also mentioned in the Berlin medical papyrus.

There appears to be some confusion about Tosorthos. Manetho identifies him with Zoser. Others say he immediately preceded that king. However, the important fact is clearly established that he was not only distinguished as an eminent builder and architect—the method of constructing edifices with dressed stone being attributed to him—but also as an eminent physician. He was recognized as a great physician; was known as "The Medicine King," and also according to Manetho was designated "Asklepios" on account of his medical skill.

In later times there were statues of this king (one of which is at Berlin) where he is being adored, which supports the belief that he was known among the Egyptians as the "physician god."

The British Museum possesses a medical treatise which was discovered in the time of Cheops. The book, dealing with the diseases of women, was held to be the word of a practitioner; it had revealed itself to a priest watching at night before the Holy of Holies in the temple of Isis at Coptos. "Although the earth was plunged into darkness the moon shone upon it and enveloped it with light. It was sent as a great wonder to King Cheops the just of speech." Leaving out altogether the mystical origin of this famous treatise, which is of a purely medical nature, its probable association with Zoser is instructive, especially in view of the assertions of Manetho and Zoser's undoubted reputation as an exponent of the healing art.

Manetho's figure may be hazy, but according to Prof. Mahaffy of serious value. Having quoted authorities to show that he examined such hieroglyphic and hieratic records as the famous Turin papyrus, Mahaffy believes that his dicta about the old dynasties should be examined with care.

In addition to those already mentioned several of the kings of the early empire, as declared by Manetho, whose statements have been corroborated by the monuments and papyri, have written or caused to have written works on medicine. Indeed, Maspero says, "The adoration of the gods of medicine in Memphis was as old as the archaic period." An authoritative statement of this nature, recognizing not only the existence of medical practitioners at that early date, but the possession of such skill as to merit divine adoration, is remarkable, especially as it has a direct bearing on the relative antiquity of the gods of medicine of ancient Egypt. Indeed, the important fact appears to be established that the writings of the Pharaohs on medical

subjects reach back as far as the First Dynasty of the Thinites, *long before Imhotep is said to have existed.*

Among ordinary mortals one of the earliest priest doctors was Hwy, whose tomb has been discovered among other priest doctors at Matariah. He was connected with the school at On and was called the "greatest of the Seers." No doubt he was an eminent practitioner and one of his great distinctions was the introduction of an eye paint still in use. There was also connected with the Sais school in the Third Dynasty a very eminent practitioner named *Ra Hesy.* He was in other respects a most remarkable man and filled many onerous positions with great credit and distinction. His portrait was carved on his tomb, which is at Sakkara.

The names of some of the Royal Physicians of the Old Empire are also known, such as Ranaèònch ("physician to the Pharaoh") and Sech met nà è onch (about 2740 B. C.), Chief Physician to the Pharaoh King Hahuré of the Vth Dynasty and described as the earliest known physician. His stela, which was presented to him by the King, is in the Cairo Museum and his tomb is at Sakkara. In the Third Dynasty there is also allusion to "flesh doctoring," possibly surgery, while Prof. Breasted has stated that the Edwin Smith surgical papyrus is the oldest known surgical treatise. The 48 surgical cases described therein were written, according to him, between 3000 and 2500 B. C., but hitherto there has been but vague allusion to surgery in the IIIrd Dynasty, so this important papyrus could not have been written before or during that period.

In spite of the prevalence of eye diseases, to judge from the number of prescriptions at this period, but one oculist is mentioned by name, one Yhy. He is named "Consultant for making to see."

There are many distinct allusions to physicians at other periods which demonstrate with certainty that the position of royal physician was a recognized status. Thus in the reign of Neferar-Ka-Ra an illustrative case is mentioned, and again at a period much later Amenhotep IIIrd. always traveled with his physician Amenhotep, son of Hapi, who was also a great architect and man of learning, afterwards deified. He can be seen in many Ptolemaic temples in company with Imhotep.

It is clear that the physicians of ancient Egypt enjoyed great reputation in foreign countries and that the best in foreign medical education inculcated itself in their schools. This is apparent at the temples of Aesculapius at Epidaurus and other places.

As an indication of Egyptian influence we are told that a physician named Melanpe, of Egyptian origin and training, was attached to the court of Prince and Princess Proetus, who were also of Egyptian origin and reigned over a province of Greece. They had three daughters who became insane, through, it was alleged, enforced celibacy, believing themselves to be cows and roaming around the country bellowing like those animals. Many other maidens became similarly affected and the prince in his distress sent for Dr. Melanpe, who, by means of true oriental bargaining, succeeded in getting a promise of the throne from the prince in the event of cure, which was eventually accomplished by very skilful means, and as he obtained the hand of one of the daughters in marriage it is to be concluded that the cure was permanent. Melampe flourished about 1400 B.C., about the time when there was a remarkable resuscitation of the Imhotep cult. He was the first and only doctor to become a king. After his death he was deified.

Now let us glance at a few of the illustrious magicians who flourished in the early dynastries. Herutataf, already alluded to as associated with Imhotep in the "Song of the Harper," brought to his father Cheops a renowned magician named Teta, then 107 years old—which would assign him to the period when Imhotep as Vizier and Kheri-heb would be at the zenith of his fame. Teta in the presence of the king performed many marvelous feats, such as fastening on the body of animals and birds the heads that had been cut off, thus restoring them to life again. One of his titles was Kheriheb, and it has been suggested by Sethe that Imhotep and Teta were identical, although it is strange that beyond vague reports Cheops had not previously heard of him until told by his son of his great magical powers.

Another striking event happened in the time of King Neb-Ka, a king of the Third Dynasty, remarkable as illustrating the great magical feat of turning figures into the living form which they represented.

It appears that a soldier attached to the royal train was found guilty of adultery with the wife of a high official named Abaner. While the soldier was bathing in the Nile a figure-of-wax crocodile, by words of power was converted into a real crocodile, and seizing the delinquent disappeared with him and retained him under the water alive for seven days, when he returned to the surface for a short period, whereupon he was again seized by the crocodile and disappeared altogether.

Again in the reign of King Senefern, father of Cheops, a very eminent writer and magician named Tchatcha-em-ank flourished. He ranked also as Kheriheb. On a certain occasion by the utterance of words of power he caused the waters of a lake to divide and rise one part on the other, enabling a valuable jewel which had been lost by one of the female attendants of the king to be discovered, thus forestalling the feats subsequently ascribed to Elisha and Moses.

All these wonderful magical feats are mentioned in the Westcar papyrus.

It is certainly singular that among the distinguished practitioners and famous magicians mentioned as having adorned the early dynasties there is no direct allusion to Imhotep, and this notable absence of ***contemporary*** evidence renders it difficult to define exactly his personality and individual characteristics, and makes it difficult also to explain his selection from so many eminent personages for the highest honors.

Was he a wise and learned man or king deified, or, as G. Foucart and others suggest, an emanation or abstraction from his father Ptah, the god of healing at Memphis, as Aesculapius from his father the god Apollo? To the Egyptians Imhotep appeared to be a legend and a god rather than a man and in one of the Oxyrhynchus papyri, found in the temple of Nectanebo, it is stated that King Mycerinus, the son of Cheops of the IVth Dynasty, established and endowed Temples for Imhotep, son of Ptah. The writer, Nechantis, alludes to the "divinity" of Imhotep, and also to "the greatest of gods and his teacher."

Greenfell and Hunt write that so far as it goes the evidence of the papyri favors the view that the worship of Imhotep began in the early days of Egyptian history, but it is of special interest as associated with the period when there was such a remarkable revival of the Imhotep cult.

From the purely human aspect certain facts stand out clearly, such as his great learning, which appears to have impressed itself through the ages. A funeral stela of the New Kingdom to Imhotep, already alluded to, says "May the priests stretch forth for thee their hands with water upon the ground like that which is done for Imhotep from the end of the water bowl." Why should there be a special rite above that for other *human* celebrities, which as already seen was ordained

for the great god Thoth? But whatever may be the true significance of the declaration, whether it is to be assumed that he was then revered as a god, or spiritual ancestor to the Scribes, it is obvious that at this period—about 1,500 B.C.—he was regarded with great reverence.

His reputation as an architect and administrator was acknowledged as well as his great skill as a magician, indeed we have it on the authority of Maspero that his deification was due to his skill in magic. But up to this period and until the end of the Ptolemaic period there is nothing definite to show that he was a physician. For instance, in the temple of Edfu, so closely associated with his name, there is an inscription which says, "Chief Priest, Scribe of the gods. Imhotep, the great one son of Ptah." He is also seen wearing—as in many other temples—the leopard skin as was the custom of priests. As having direct bearing on this very important point there is an extremely interesting contemporary record of Imhotep's time. A broken statue of Zoser now in the Cairo Museum has quite recently been unearthed by Messrs. Firth and Gunn, and ably described by the latter. The name Imhotep or an Imhotep appears on the base of Zoser's statue, and the fact of a private name appearing on a royal statue is a very singular circumstance in itself, and what is still more remarkable, as Gunn points out, is the fact that among the titles inscribed on it that of "Heliopolitan High priest" is the only one of exalted rank, as well as the only title in common to those usually associated with the traditional Vizier Imhotep. There is no allusion to the healing art.

But during the reign of the Ptolemys his medical reputation appeared gradually to increase, although as Miss Guest has pointed out (*British Medical Journal*, April 6th, 1926), there is not much evidence to show that he was a physician; his skill in the healing art being mostly magical. Thus a dream of the high priest P. Sher-N. Ptah (Brugsch, Mesaurus V 923) records that Imhotep in a dream promised the reward of a son on condition that a building be made in the holy place at Memphis where his body was concealed, and in one of the Oxyrhnchus papyri discovered in the second century A.D. it is recorded that Imhotep "appeared to the writer in a dream and cured him of fever."

In the temple of Kasr-el-Agouz (116 B.C.) there is a representation of Imhotep with the inscription "Son of Ptah, beneficent god begotten by the god of the South Wall, giver of life who bestows gifts on those he loves . . . who provides remedies for all diseases."

From these examples alone it is apparent that his skill as a magician was fully recognized and that his practice was mostly magical, but later in the Hermetic literature of the first century of the Christian era he unquestionably appears as a physician.

He is now completely assimilated with Aesculapius as defined in the papyrus just alluded to, which is headed "Praise to Imothes Asklepios." He is designated Imouthes son of Ptah, and Asclepius son of Hephaestus, and is alluded to as the discoverer of the Asclepian art . . . all who have been cured of disease through serving of the god . . . all who practise the healing art are asked to assemble; and finally the king Mycerinus is asked to look after his tomb.

We may now be in a position to form some idea concerning the selection of Imhotep from so many celebrities, as the god of medicine by the Greeks, for although deification probably took place about 525 B.C., when Cambyses reigned in Egypt, it was in all probability due to Hellenistic influences. In support is the acknowledged fact that the influence of the Egyptian school was greatly exercised in Greece from a very early date, as we have seen in the case of Merampe, who studied at On about 1400 B.C., and the line of treatment pursued in both countries was identical, its fundamental basis being psychic, comprising magic, incantations, incubation sleep, etc.; both also loved to make use of serpents in order to strike the imagination of the sick. Another significant circumstance is, that at the period when the cult of Aesculapius flourished at Epidaurus in the 13th century B.C. the cult of Imhotep was greatly revered in Egypt.

It is known that the Greeks were very bountiful in their bestowal of divine honors, but it may be asked what is the significance—religious and political—of temples built by nearly every Ptolemy to Egyptian gods quite foreign to Hellenistic influence?

The reason for the selection of Imhotep as god of medicine must be left to posterity to solve. His life, to be sure, is full of the mysterious and miraculous, and around his name have gathered fabulous myths; so, naturally, fond legends have crystallized around the myths, making it difficult to distinguish between the true and the false.

NOTE: Excavations now proceeding at Sakkara, near the step pyramid, under M. Firth, may in the near future disclose the tomb of Imhotep.

Ether Supply Watched Closely by Government Chemists

The recent seizure of ether at Boston and Providence by the Food, Drug, and Insecticide Administration of the United States Department of Agriculture has brought from the department the statement that the sampling of ether on the market is carried on continuously and extensively by inspectors and chemists of the Food, Drug, and Insecticide Administration. Regulatory control of ether to prevent the use of the substandard product is faced with certain difficulties, say officials of the department charged with the enforcement of the food and drugs act. The technic of the manufacture and packaging of ether has not yet been perfected to a point where there is absolute assurance that the ether meeting every requirement at the time of packaging will not upon standing deteriorate to a point where it will not meet the standard of the U. S. Pharmacopoeia. Progress has been made in the development of manufacturing technic, but the problem has not been finally solved, the officials say. This situation necessitates very frequent and comprehensive inspection in order to prevent the consumption of substandard ether.

No one connected with the Department of Agriculture would permit himself to be quoted as saying that ether containing peroxides, which is the usual criterion of deterioration, would endanger the lives of patients on the operating table. It was said that there is a belief in certain quarters of the medical profession that such deteriorated ether is unsafe. However, the regulatory officials say it is not necessary for them to prove that such ether may be harmful to the patient before they can remove it from the market, because the Federal food and drugs act sets up the specifications of the United States Pharmacopoeia as its own standards of purity, and ether failing to meet those standards is in violation of the act if shipped within its jurisdiction. The officials state that for several years the utmost care has been maintained to safeguard the country's supply of anaesthetic ether and that the seizures recently made in the New England cities are simply a few of the numerous detentions that have been made. Thousands of samples of ether have been tested in connection with this survey during the past year, and testing will be continued.

The Treatment of Furuncles and Carbuncles

A. Raiga has treated a series of forty-five cases of furuncle and carbuncle with bacteriophage (d'Herelle) of various types, the best results being obtained with antistaphylococcus bacteriophage. The method employed was both local and general, the bacteriophage being applied locally as a dressing or an injection, or generally in subcutaneous injections, on from one to four occasions. In the great majority of the cases no incision was necessary, and the condition rapidly cleared up with the above treatment, fever and pain often disappearing in a few hours, the inflamed area undergoing rapid purulent liquefaction with elimination of the core, and the inflammation subsiding. In a few cases the furuncles recurred, but in no case of carbuncle did this occur.—(*La Presse Médicale*, February 9, 1929, p. 187.)

The Relation of Diet, Exercise, and General Health to Fertility

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Much has been written on the relation of diet to fertility. Hart, Steenbock and Humphrey and McCollum[1, 2], Pearl[3, 4, 5], Evans[6], Evans and Bishop[7], Burr[8], and especially Reynolds and Macomber[9-17] Benedict[18], and others have done a great amount of work on the relation of diet to fertility, also on the relation of calcium to fertility. In the case of the latter element, it seems as though lack of it may allow fertilization to occur, but the products of gestation die and are absorbed later, thus causing an apparent or clinical sterility[13, 14, 16, 17]. Sure[19] has worked along similar lines with identical conclusions. Practically all of this work was done on laboratory animals, and while there is apparently no doubt that in such animals sterility can be induced by diets deficient in vitamines, it remains to be seen just how much of this laboratory work can be transferred directly to human physiology, because with the varied diet of most people of to-day an actual deficiency of diet probably occurs but rarely. Personally I feel that the consideration of diet and fertility alone is too narrow a limitation, and that instead, one should say general physical condition and fertility.

The influence of the general physical health on fertility I believe is only too often disregarded and yet of great importance, as has been shown by us in an extensive series of semen examinations in men of varying ages and varying degrees of health.* Instead of diet, I believe physical exercise to be the most important factor leading to good physical health and to fertility, which seems inexorably bound to the state of health of the individual. Of the diet all that is required is that it be sufficient and have no vital deficiencies which would cause avitamitoses. The world's greatest experiment regarding the action of diet was carried on during the last war, where the diet in the Central European countries was certainly deficient in every way, yet fertility, even though reduced according to some statistics (and not according to others) was most assuredly not reduced in proportion to what it should have been were the diet as large and important a factor as it is considered by some investigators to be. Again, our poorest people often have the worst food and the greatest number of children, but they must work hard, and hence do not suffer from lack of exercise. I do not believe that low diet alone is a cause of infertility, and consider Benedict's experiments in this direction entirely inconclusive. The only point brought out by him was the fact that diet affects sexual desire,—something, which was known to all the ancients, as a perusal of the classical literature will show. Lowered sexual desire, however, does not mean lowered fertility. A man or a woman may be infertile, but have a strong libido, and vice versa. The most outstanding example of this kind I have ever seen was a patient of mine in Europe, whose husband had intercourse with her seven times in five years, and yet the woman had two normal children by him, as their similarity in appearance to the father showed. Furthermore I have very strong reasons to believe that the woman had no extra-marital connection during these five years.

The relation of exercise rather than diet to fertility is shown by another case. This patient was married seven years without his wife ever having conceived. He was a banker, ate well, but never got out-of-doors, took no exercise, but spent all his time making money and worrying about it, until he had a nervous breakdown. He was sent away and spent six weeks as a sailor on a ship, being outdoors all the time, eating rather poor food, but working hard. Nevertheless, a month after he returned home his wife became pregnant. Unfortunately the semen in this case could not be examined. In one of my cases, however, the influence of the general physical status on fertility was shown as this man who before had motile, although more or less abnormal sperms, lost all spermial motility after an attack of influenza, the diet throughout remaining the same. I must say I cannot quite follow Macomber[17] when he claims that women who are on a low diet and too stout are eating too little and keeping their weight by reducing exercise to a minimum. Personally I feel these women are eating too much for the amount of exercise they take. This means increased fat, diminished circulation, diminished oxidation and diminished blood supply to the ovary, and hence ovarian deficiency and a vicious circle, and the way to break it up is to make such patients exercise, the diet being of secondary importance. In some cases adipositas is probably, as Lahm[20] also believes, due to deficient ovarian function, and therefore increased exercise to increase the blood supply in the ovary will cause increased ovarian activity and cure both the obesity and the infertility so frequently associated with this condition.

This view of the importance of exercise in persons who are overweight is further supported by the investigations of Lauter[21], who showed that there is no difference in the output of energy in fat and normal people during muscular exercise. The whole trouble arises, as Bauman[22] correctly states, in a disproportion between food intake and energy output. Not only are obese women often sterile but fat animals are known to animal breeders to be of impaired fertility, and Woodward[23] for example states that the motility and longevity of bull sperms can be increased by daily putting the animal on a treadmill. That the influence of diet is not a definitely settled question is shown also by the fact that Reynolds and Macomber (l. c.) and others lay particular stress on sufficient proteins and condemn more or less the carbohydrates, whereas Guggisberg[24] claims that of all foods by themselves carbohydrates are better than other foodstuffs given alone. He claims also that general nutrition alone is of less value than the special substances of the food especially vitamines B, C, and E. This agrees closely with my personal opinion on the subject. It is, however, hard to formulate any definite rules on this matter of diet and fertility, as the subject is still in doubt in many particulars, and even leads over again to the endocrinological field. Vogt[25] mentions that not only the vitamines themselves, but their respective ratio to one another may be important. Furthermore, vitamine-free food prevents the oestrus cycle in the white rat, so that Vogt[25] believes female genital hypoplasia may be

(*Concluded on page* 288)

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Convalescent Care as a Clinical Fine Art With Special Reference to the Needs of the Client

Second Article

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Man as a Going Concern

HE CONTINUES TO GO BLITHELY UNTIL HIS MACHINERY GETS IN TROUBLE. THEN HOW TO MOST PROMPTLY AND THOROUGHLY GET OVER IT

Man, in common with other animals, is a living, going concern. His life energies go along certain ordained pathways toward special ends as to comfort, effectiveness and happiness. His manner of going is through ways and means long ordained and in accord with animate nature.

So long as "the going is good" his inside contrivances run themselves. When energies flow where and how they should, all is well. When the going is not so good, when things get started in the wrong way, it is then up to the man to take careful notice of any hindrances in himself to right going, and determine what things are amiss; their nature, extent and what resources are his to effectively restore them.

Life goes on in accord with the start each one gets; and as we win for ourselves, or as our training supplied. Life is a product of urges and choices; of impulses and restraints. When in body trouble we can of course trust largely to nature's God, but unless we make large and wise contributions in our own behalf we will come to frequent grief or *disease*. In short, *ease* as contrasted with *dis*-ease consists of harmonious tides or rhythms in the body defense and repair forces. When, for one reason or other, adverse forces are encountered from without, or are generated within, these rhythms become disordered or deranged; then arise the beginnings of *disease*. Indeed the ideal health enterprise is learning when and where disease begins and to nip it in the bud. When disease has advanced through neglect of warnings, then the task is to do the best we can to secure a state of *forward going convalescence*.

What is health? It has been described as the ability to adapt oneself to any environment, physical or mental, and stay put. Observe how some exceptionally vigorous old people keep alive, and in fair activities, yet their mind power, their emotional balance, and their capabilities for useful living, fade away. The aims of medical endeavor are not only to keep alive but in working condition, in order to be of some good to others as well as to ourselves.

Man must know enough about the commoner causes, and phenomena effects of wrong goings on. One of the first considerations is the change in the form and quality in our body building materials when taken in, digested and assimilated. That is, metabolism, or chemical alterations in foods, fluids, minerals and gases, oxygen debt and credit and loans or borrowings.

Of course you personally don't need to bother about the details, but you can keep a long way ahead of the game if you are able to form a clear picture of where you get on or get off. Almost every one nowadays has a practical knowledge of an engine of one sort or another. Start out with the fact that every living body cell is a chemical engine which has a special part to do in either generating enough or distributing, placing or getting rid of, surplus power. The one thing every one of these separate and particular engines must do is its own work or the total mechanism falls down in some ways. There is then engine trouble, from spark plug to rate of velocity and sustained action or efficiency. Bear in mind that the animal (or man) engine is a self stoking, self cleaning, self repairing and self guiding engine. We can't buy "spare parts". What you have must be made to do and when properly furbished up will then serve beyond belief.

If the body as a whole fails to do the work we have a right to expect of it; fails to work enough and in the right way, then the energy and contrivances grow queer; gets crowded up and are pushed too hard. The vents must be kept open; the excess power must get away safely. Poisons formed in the body lead to explosions, like the knocking in an automobile.

You may remember an animal—once a necessity—called a horse. If you gave to this equine engine too much rich food, and kept him bottled up in a stable, what happened? Well, the same thing as would happen to you. Explosions in your engine may not be the frank, healthy back-fire of an all over energy display, but some weakened spot or part gives way and causes trouble or sickness—that is *disease*.

What is Disease?

IT IS A PHASE IN THE EVOLUTION OF THE RACE; IT IS NATURAL, NOT CONTRARY TO NATURE; IT IS INEVITABLE AND TEACHES MANY SALUTORY LESSONS. WHAT ALSO IS CONVALESCENCE OR RECOVERY? THE REESTABLISHMENT OF NATURAL POWERS AND CONDITIONS

Every man or woman is fated at some time to suffer some form or degree of bodily (or cellular) disorder, bodily trouble or disease. The borderline between disease and full-ease is the period or phase of convalescence. Man, in order to serve his own best interests, should become familiar with what disease is and how to deal with the resources at his command in such a way as to recover from his worst estate and reach as promptly and completely as possible, his best estate.

During this transition period (convalescence) he is often in greater peril that when disease or injury was at its highest; or while sick enough to give up and be guided by those whose business it is to put a fallen man on his feet and on the road again, ready to do as before—also often to improve greatly on his former self.

Disease is a step in evolution; or a phase of race development. It is not a thing apart from one's earthly journey; but merely a situation to be reckoned with and for the display of such wisdom as that one has and has trained to efficiency. Above all disease is in no respect a manifestation of Divine wrath. Punishment of some sort does usually come through neglect of one's abundant talents which is a sin. It is, however, a self inflicted chastisement. Don't let it occur again.

It simplifies the picture of disease to show it as due—in most if not all cases—to: *poisoning, starvation* and *shock.*

Under poisoning we may include whatever harmful things or substances become introduced into the body from the outside or are formed in excess inside, capable of overwhelming our natural tendencies toward functional poise. Among the worst of these are the infections. The defense against these is a state called: immunity. (See end of chapter.)

Starvation is a state of deprivation of those materials (foods, fluids, vitamins or minerals) essential to welfare, vigor, or active life. The great regulators of nutrition are the secretions formed by the endocrine glands. They are intimately associated with the absorption of certain essential inorganic or mineral salts or bases. Of all these there must be just enough but never too much, or forms of poisoning arise.

Shock is the effect of severe or violent disturbances or damaging agencies, exerted upon the body, capable of throwing the mechanisms out of gear, off their base, of overwhelming the normal workings of the body, above all the mind or emotions. What we think about things is often of deeper significance than the things themselves.

Certain Familiar Forms, Qualities or Types of Disease

THE ACUTE, THE DELAYED, THE PROTRACTED OR CHRONIC AND THE INCURABLE AND RELAPSES.

Knowledge of the more important of these facts should help one to learn where and when expert counsel is required. This would afford self protection from dangerous blunders of omission or commission, or a mixture of both. The first thing needful, in taking care of a weakened self, is to know how to steer the human craft to safe haven; at least not to get into the wrong port; to help guide oneself during convalescence.

Diseases—except the infections—are mostly man-made through imprudences, hence can be unmade by the man up to a certain point or degree. All diseases are disturbances or disorders of the self balancings among life forces, to keep or to recover health.

We may divide diseases as to forms, degrees and qualities, into:

(1) The acute diseases, in most of which fever occurs. This plus heat is a defense reaction whereby the body processes are quickened, amplified, made more effective. Hence fever is to be welcomed, rather than feared. If no fever, then the forces for restitution are lowered, the constitutional vigor inadequate. The one essential thing is to rest in bed so long as may be necessary. Thus to husband all available powers for restitution; of self balance as may be necessary.

(2) Protracted or semi-chronic, or lingering disease, often with recurrences of fever, showing that some persistent acute causes are still at work retarding recovery, unless these causes are known and removed the dangers persist. (See Tuberculosis, an extreme type of a long, slow struggle between powers for good and for harm, deterioration, relapses or slipping back.

(3) Chronic disease. The defense forces are then overborne; are unable to do effective self repair. The structures have lost their tone, their vigor, and the body requires special care and guidance through combined and simultaneous means for recovering balance. Too often some structures are nearly dead but enough vitality may remain which can be bettered, brought back to effective action. The only safe way is through expert aid.

(4) Chronic and incurable diseases may be grouped together for picturing. The differences are of degrees; of professional opinion. More and more are these obstructive states yielding to advancing knowledge, and especially to superior ways and means of convalescent care and personal cooperation.

The situation is a deplorable one. The defense and repair forces are inadequate, tardy, irregular or out of proportion. Or they are led astray, overborne in spots or areas, and the machinery of readaptation is kept out of gear.

Doubtless there has been, or may now be, some despotic hindering cause at work. But these, again, may have ceased activity; merely the effects persisting. Varying blends of too little or too much resistence are present in the half sick and half well parts of organs. The task, what and how to do, has many points of similarity in all slow disease as will be shown.

The crux of the matter is often deprivation of something needful—a mineral salt—or an excess, or a deadlock on sticking point. It is like delayed catalysis in chemistry. What to then do includes: (1) removal of the obstructive agency; (2) release of depressed forces, their replacement in positions of advantage; then (3) retraining the misused parts and powers along right lines.

Also we must differentiate between diseases (a) of the body; (b) of the emotions, and (c) of the temperament or feelings (emotions) and body combined; and (d) of the brain, the engine or organ of the mind. True mental disease, by the way, is much less frequent than has long been thought; only about 15% of those cases declared insane are true "madness"; 85% being manifestations of body disease which may yet be, and pretty surely were once, curable. Some authorities aver that **all** insanities are due to physical disease.

While it is neither possible nor necessary for any one—not so educated and trained—to know much about disease, certain points come up in every one's experience when a little sound knowledge is very desirable. Then that little should be accurate in the main or various errors arise, blunders are committed and needless alarm felt. Or there may be perilous apathy on the one hand or blind faith, or neglect on the other.

These inaccuracies as to fact are of less moment when the invalid one has gotten well over the worst of them. Even then correct information has many saving uses. Especially true is it about disorders of the mind and emotions where they obtrude or dominate. It is no evidence of courage or wisdom to disregard the forces of the enemy; rather it is just plain foolishness; bad strategy; atrocious act.

Certain common features or peculiarities of disease should be known and held in mind. Many of these are real but some are unreal. Among them are the results of such bad habits, as of too much self watching, anxiety, suspicion, fear or dread, likewise exaggerations or misinterpretations. When in doubt seek expert counsel and get the matter cleared up, then and there.

Among the common features indicative of the unreal are sensations of queerness, strangeness, weakness, moods, excitability, or apathy. Another is chill, shivering when the atmosphere is not unusually cold, or a feeling of heat when the weather is not

unduly hot. This often indicates the onset of an infection overcoming the defense powers.

The most impressive sensory warning is pain, ache, tenderness. There are also reflex disturbances, such as nausea, vomiting, cough, vertigo, etc. (See Defense Forces.)

The cause for any such confusion, warning pain or distress, demands investigation, not merely relief. These are blessed harbingers; signals. They should be welcomed as advance information of trouble which should then be located, explained, and negotiated, i. e., handled suitably.

Of course many such distress signals point to perils. The majority are mere results of morbid anxiety. The same may be said of any troubles, of any nature, when they arise. That is the occasion when one must use exceptional judgment, reasoning, caution and dependence on others. In any human who is in a state of acute fever, judgment is then jeopardized and not so clear. "Stop, look, listen"—to expert counsel.

Having had personal experience in disease is of great value; just as experience in living, working, business, domestic, social; in "practical politics," or even in forms of play. Success or failure when extreme tends to disorder that one's sense of proportion and to "carry him off his feet." A moderate attack of "nervous break occurs" in early or middle adulthood is often a blessing in disguise. It teaches emphatic lessons. A systematic course of "partial rest measures" may well forefend of and a later or worse, or destructive collapse.

Chronic Disease Contrasted With Acute Disease

Chronic disease is a thing by itself. The features common to the majority of forms are so similar that the chief remedial measures apply to most. Chronic diseases and their obstinate consequences are too generally regarded as less occasions for expert supervision than the acute. This is false economy.

Acute diseases are of vastly greater variety, shades and features. The causes and the responses are sudden, often rampant.

In a chronic invalid the sense of proportion has become small. So many disappointments have been suffered he is doubtful of every opinion. In acute disease, "hope springs eternal". The ship is under weigh and can obey the helm. The chronic drifts, hope fails, fades and falls. In the acute the formation of body poisons is characteristic and rapid. There is rarely the stagnation so uniformly seen in chronic diseases.

The one attacked by an acute disease is then presumably in fair or good health; has ample reserve forces, metabolism and elimination is normal. In chronic disease the eliminative functions are at a disadvantage through stagnation; backing up the tides of fluids, foods, gases and energies.

In both groups ample rest is needed unless the chronic has been bed or chair ridden. The walking chronic in half the cases is constantly doing too much, urged by necessity to earn or a sense of duty. For such, a period of absolute rest is desirable to recover enough energy to serve as capital for yet further progress. (See Systematic Treatment by Rest, Isolation, Special Feeding and Graded Movements as Devised by S. Weir Mitchell.)

In forming an idea of any chronic disease and its evil effects, it is useful to consider certain reaction phenomena common to a group. Having this in mind choice of remedial agencies can be more intelligently made.

Stiffness, loss of pliancy or of moveability in structures when present becomes a source of impairment of far reaching force. Remove these mechanical hindrances and natural forces will then taken charge effectively.

As an illustration let me cite the structures of the neck, which will be found to frequently show rigidities interfering much with functional efficiency of the organs of special sense: the eyes, nose, ear, as well as with circulation in the brain and basal centers. It has been my personal experience that by enhancing flexibility, pliancy, and practicing movements normal to the part—the neck—contributes much toward not only the increasing of ease, alertness, and sharpness—that is, acuity of sense perception—but also to win the restoration of sense impairments.

Note this crude anatomical picture: all fluids supplying the head, also all nerve impulses, pass through the isthmus of the neck. Let the four fingers of one's hand represent (1) an artery, (2) a vein, (3) a lymph channel, and (4) a nerve. Encircle these with the fingers of the other hand—lightly and gently. The encircling fingers may represent muscles, ligaments, tendons, skin, etc., in a state of normal elasticity. Passage of the contents through the four mentioned supply tubes proceed normally. Thereupon begin to exert a slight increasing pressure by the encircling fingers representing a slow, insidious progress of rigidity. To be sure, compression upon the channels of supply and elimination is exerted so gradually as often to pass unnoticed; compensation and readaptation doubtless occurs to a certain extent. But unless pliancy is restored the parts continue to work at disadvantage.

Disease of Personality

A large field of curable but dangerous diseases are blends of physical and mental states, called "diseases of personality". They are displayed by obcessions, morbid impulses and strange acts. They must be carefully and skillfully handled or may become firmly fixed. Or the person may develop strange and perilous urgings and may commit depredations.

Example: An attractive young mother had the recurrent but not over mastering impulse to murder her young husband and her child. She was as much in love with him as seemed possible, also with her child. Her morbid condition arose from abhorrance of a tyranical father. After various measures for a year or two I determined to separate her from both for several years or until the condition yielded.

Will she recover? Many like cases get well but it becomes a question of how gravely the personality is dethroned and how thoroughly one is then reeducated; also retrained. Such conditions when met have usually become too fixed before the situation can be controlled.

Disease and Man's Self Restorative Resources

Certain wrong notions persist among "just folks" as to the nature of disease and its control. A false belief prevails that somewhere there is always to be found a specific remedy for a particular ailment, when its nature has been identified. Another error is that self limitation of disease is a natural law.

A natural law is a mere formula for expressing uniformity in the action of some natural force or forces so long as conditions remain the same. The

term is not a *prescription* but a *description*. We owe it no allegience; the object of discovery is not obedience, but mastery. Every natural law that is learned gives us additional power over nature; inasmuch as it reveals the conditions necessary to the intelligent control of the forces of nature when disordered. Also its progressive conquest. Science is for the practical purpose of enabling man to intelligently direct the forces of nature; knowledge is power.

This idea of self limitation of disease ignores certain principles of causation which tend to show that: disease is always of diversified parentage. Disease is the product first: of the determining cause; never one alone. Second: of the state of resistence of the individual at the time. Third: of the status of that one in respect to his or her original make-up, constitutional or inherited qualities, and accidents of development and training. Fourth: the state of one's feelings about it; emotional attitude. Fear is capable of acting as a grave disturber of health and of confusing the situation. Hope and faith so enhance vigor as to often stem the tide of evil forces and bring victory out of seeming defeat.

When the body defenses or reconstructive responses so liberally provided by Nature's God are given opportunity to proceed unhindered, they may serve to carry the individual safely from cradle to grave. That is, provided no overwhelming shock, poisoning, starvation nor other destructive agencies be exerted upon him from the outside. Health is capability to meet and survive new and strange and difficult situations.

Among the few most important facts every one should know is where and how the powers for evil in the sick body begin to be overcome and the powers for good, or repair, to regain headway. Convalescence consists of supplying each and every active cell with what it needs.

You will have probably become familiar with the word: "metabolism". While this is indeed a highly complex matter, it can be reduced to simplicity and I will try to do it.

The main vitalizing activity of the mamalian body is heat generation, heat distribution and heat regulation and heat loss. This central heating system must be kept thoroughly balanced wherever one is, whatever one does.

The chief feature of life processes is respiration or breathing; taking in of air—and especially oxygen—into the lungs where it is brought in contact with the blood and purification takes place.

If for any reason—sickness is being here considered—this oxygen fails to get to every active cell, the best that can happen is to exist for a short time. If it (oxygen) gets to the sick cells in sufficient amounts and in suitable forms, these ailing, depressed or depleted cells "take heart of grace" and the other inherent powers of defense and repair become encouragd. Then convalescence is hastened, recovery expedited, and reestablishment assured.

The particular organs which have charge of this task are the ductless or endocrine glands. On them man depends to keep action and reaction steady, on the go, so as to get the largest mileage from fuel juices. They are merely alluded to here as the great regulators of animal energy. They manufacture or secrete materials in materials, juices or self formed medicaments of which every one must have just enough or starvation arises, but not one bit too much or poisoning takes place.

These go far toward carrying on the task of living. Their duties are very large and varied, but we must do our part in keeping them in good order. These secretions each exert their special push or pull work or urge one way or the opposite way. For example, the most conspicuous one in this connection is: the temperature regulation or tissue respiration (oxygenation). This job is done by the adrenal glands. They also form check drafts. In short if you are below par, and in a state of convalescence, you need to cooperate with, and give to your contrivances, the right chance and encouragement, favorable conditions, and they will do the rest.

Immunity

The Self Protective and Self Curative Powers of Attitudes of Body Cells; the Natural and the Acquired

One of the blessed wonders of our animal organism is that we have in us effective resources which, when judiciously encouraged, serve both for "bane and antidote"; for resistence and for cure. When an infection develops it can be so thwarted, reduced or nullified, that the period of convalescence is so abrupt as to seem almost instantaneous.

Immunity, or resistence to infectious disease, is of two opposite forms. First the natural power of self protectedness which some have to a wonderful degree. The second: is the artificial or acquired form which most people can get either through accident or of set purpose.

As to the first form all we need to say here is that there it is; a blessed gift for which we should be duly grateful. Of the second form there are four varieties: (a) the anti-microbic protection conferred by art based on science, through the use of antitoxins, vaccines and other biologic preparations which fortify natural powers. They act both for prevention and—when the infection appears—they can and usually do—become curative when applied early enough.

(b) Active immunity; acquired by a person after having been fortified by an attack of the disease. (c) Acquired by a parent and passed on to the child, called spontaneous, self formed, the actual or spontaneous or the born in one (congenital).

Many reductions in severity of infections, as well as for precautions, are brought about by slight unrecognized attacks. These lead to the formation of most valuable forms of acquired immunity through "specific antibodies" or self defensive conditions of the blood through cooperation of the regulating glands (endocrines). These together so strengthen the native protective mechanisms of that one he is no longer susceptible to that infection.

This "acquired" immunity, when complete, may be temporary or may last indefinitely. Commonly it fades away, soon or late. These periods vary with different infections and with the same infection at different (irregular) periods, in accord with the inherent powers of that one's constitution. A second similar infection may occur but is then likely to be much less severe than the primary one, but not always.

Under a complex civilization where a large number of infections are constantly threatening, the subject (patient) often acquires an exceedingly mild infection; so "light" as to escape notice, but which none the less suffices to protect that organism from that infection, even though—as in the case of tuberculosis—the infective material becomes packed away safely

and is prevented from becoming distributed further unless some inflammatory condition occurs, or another form of germ poisoning so behaves, as to destroy the defending powers, and lights up the latent, walled off infection mass. This is plainly a great boon as a safety device.

It often happens that the individual when infected was also then in a state of lowered vigor, the result of diversified former disease agencies, yet he still maintained a fair level of health. Then, upon the onset of some other severe disease or infection a notable change becomes wrought in the organism and the protective forces are roused so thoroughly as to cause the earlier diseases to disappear, as the latest one subsides. If suitable care be then taken, these diseased states all retreat together but at varying rates and degrees.

This fact is especially true where some one of a multitude of mild diseased states occur, such as are due chiefly to faults of body chemistry (metabolism) or the accumulation of secondary products (waste materials, body formed poisons or toxins) in the blood. It also happens that whereas a variety of diseased states persist and keep the victim down to a lowered state of health—of functional balance—and when this last one secures full attention, then effective means are available and can be used for raising the level of vigor up to a much higher plane. The final emancipation is thereupon more nearly radical.

For example: you may be able to carry on your occupations and regard yourself as well as you can expect. Then after a severe bronchitis or pneumonia your condition is suspected of being tubercular. Thereupon you sojourn in some ideal climate, live a rational out of door life with *just enough* of healthy exercise and equally plentiful rest. Also if you take special care with your diet and digestion, gain in weight, in muscle mass and power, get abundant sunshine or sky shine and buffeting of clean winds, then your whole level of vigor can be raised up and your phantom or—it may be—genuine but slight tuberculosis, disappears.

Or—too common an occurrence—you may have been working too hard, or rather you fuss and dread and dwell on your troubles, magnifying them beyond what they really are, or deserve to be considered. We all are liable to do this. Then you are sent away for "a change of air". You go—if in winter—to some semi-tropical resort, Florida or the West Indies, and live for months in the gracious, all invigorating winter sunshine. There you accumulate a degree and volume of vigor which may readily carry you to double the age you could have expected had this knockdown not occurred.

Thus "all's well that ends well." More often than we realize we profit by "blessings in disguise", through warning woes pains, distresses. However, we must make good use of plain common sense and of information. This might have proved of vast benefit in prevention.

For example: the first essay I wrote was upon the often great benefits conferred on Captains of Industry who "break down" in their prime. Then they were "laid by the heels," given a rest cure and taught a host of things every one needs to know, but few learn. Thereafter that one becomes so effectively trained as to be: "the master of his fate, the captain of his soul." Better yet, the architect of a superior destiny.

Relation of Diet, Exercise and General Health to Fertility

(*Concluded from page 283*)

acquired, and be due to food disturbances in the growing age, and must not necessarily be considered as congenital in every case. Vogt (l. c.) and Fellner (l. c.) claim to have obtained a substance similar to the female sex hormone not only from the ovary and placenta, but even from the testes, so that Steinach's view of the contra-action of the ovary and testicle seems not to be true, which theory, by the way, has also been disproven by other men. More than that, however, a substance which like the female sex hormone, feminin or folliculin, produces an oestrus cycle in the rat has been obtained from plants (flour, oatmeal, rice, parsley, potatoes, cherries, plums, etc.), so that the whole field, not only of diet and fertility, but of endocrine action and fertility, is still very much confused, and for the present, instead of clearer, seems to become more and more clouded. Many facts here need verification, but they seem to show what was said before, that the question of fertility is not one only of the sex cells, but of the health and proper functioning and normal relation of the body in all its different parts.

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30 East 58th Street

Ten Points in Posture

Health as well as beauty is to be found in correct carriage, and many disorders of the human body are due in whole or in part to poor posture, according to Dr. Philip Lewin, a writer in *Hygeia*, who adds that in many cases poor posture is a result of habit. To remedy the defect, Doctor Lewin lists the following ten commandments:

1. Stand tall.
2. Sit tall.
3. Walk tall and chesty with weight transmitted to balls of feet.
4. Draw in abdomen, pulling it backward and upward.
5. Keep shoulders high and square.
6. Pull chin straight backward toward collar button.
7. Flatten hollow of back by rolling pelvis downward and backward.
8. Separate shoulders from hips as far as possible.
9. Lie tall and flat.
10. Think tall.—*Ohio Health News.*

Pulmonary Neoplasm

The frequency with which these patients present themselves as "neurological cases," with symptoms due to metastases in the central nervous system, has been emphasized by Fried, who ascribes it to a hæmatogenous spread dependent upon the anatomical relations of the vessels of the lungs and brain.—Hunt, *The Lancet*, April 13, 1929.

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Unworth of Great Sires

I perceived it to be a human creature not six inches high, with a bow and arrow in his hands, and a quiver at his back.
—*A Voyage to Lilliput*,
BY JONATHAN SWIFT

The retiring President of the American Medical Association, addressing the Portland Session in July, called attention to the nearly complete indexing of the world's medical periodicals by those early giants in this field: Billings and Fletcher. But with the great growth of this literature there has been a falling behind in the thoroughness with which such work is now done.

Dr. Thayer, in the address alluded to, remarked that it seemed to him "that, if at any time the funds should be available, it would be a great opportunity for this association to take up the torch and do a world service by seeking to make the *Index Medicus* as relatively complete as it once was."

But the ominous news was heralded in the same address that another great publication, the *Index Catalogue of the Library of the Surgeon General's Office*, may end with the present series for want of Congressional appropriations.

Inspired by these matters is the editorial in the *Journal of the American Medical Association* of September 14, entitled The Quarterly Cumulative Index Medicus, in which it is stated that the share of the library of the American Medical Association in the indexing of this third publication amounts to only 350 periodicals, the remainder being done in the Army Medical Library, which means that out of the world's 2,000 medical periodicals but 1,400 are indexed more or less completely.

To our mind, this editorial carries two meanings. It is a cry of alarm over the prospect of a demand that will not be denied that the American Medical Association make itself responsible for the indexing of every article in every medical periodical that is published. It is also an attempt to create the impression that the American Medical Association is too poor to essay such a job. Such an index would be wasteful and useless, says the editorial, and then goes into the poor equipment in periodicals of our twenty medical libraries in an effort to show that the articles indexed would not be available in these libraries. Moreover, it insists, there are hundreds of publications that do not contain anything meriting permanent record.

With regard to the last point, the godlike censor postulated by the editorial in question, had he been functioning in 1843, would have excluded the periodical which carried Oliver Wendell Holmes's paper "on the Contagiousness of Puerperal Fever" (*New England Quarterly Journal of Medicine*, 1842-3, vol. 1, pp. 503-530). The editorial speaks contemptuously of what it calls fly-by-night publications. Well, the *New England Quarterly Journal of Medicine* appeared in July, 1842, and disappeared after the June, 1843, number.

Such a censor, had he been functioning in 1895, would have excluded the periodical which carried Wilhelm Konrad von Roentgen's first communication on the *x*-ray, "Ueber eine neue Art von Strahlen,' published in the *Sitzungsb. d. phys.-med. Gellsch. zu Würzb.*, 1895, pp. 132-141. This in most instances was a wretched sheet of only sixteen pages, which did not even boast a cover.

And who is going to be misled by any bitter cry about the poverty of the American Medical Association? The finances of the American Medical Association have been a delicate subject in times past. Any crafty cry on the score of economy, raised now, above all times, will surely arouse a keener interest in the actual wealth of the association. Is not such a gesture ill-advised? And the implication that the rank and file of the profession have no sense of humor is not at all convincing. The American Medical Association is poor! One is not expected to laugh at this.

It will also be recalled by some that the American Medical Association was too poor to become much interested in the Physicians' Home (for the care of aged practitioners).

The American Medical Association delegates have no power. That is centered in the trustees. By whom will they be swayed in their deliberations and action upon this grave question? By a Lilliputian or by men to whom the spirit and power and aims of Billings and Fletcher are a sacred tradition?

Will the trustees fail to disarm this Lilliputian when he again aims his bow and arrow at the hated independent press of the world?

Imhotep

That the early gods should so often have been closely related to the sun as healing divinities (Apollo, Æsculapius, Imhotep) shows that man sensed heliotherapy almost from the beginning of things.

The present generation, pagan in more senses than one, is showing its kinship with the early sun worshippers.

Medical scientist, patient, and the naked devotee on our beaches are alike kneeling before the altars of the sun gods.

Dr. Garry's paper in this issue will make us feel much better acquainted with the Egyptian Æsculapius. Why should we not be? Are we not addressing our prayers to too many unknown gods? Comes Dr. Garry, saying: Whom therefore ye ignorantly worship, him declare I unto you.

The Lay and Medical Press

We note with considerable satisfaction that the higher class papers and periodicals are beginning to realize that doctors are not entirely money-grubbers, but really have a few high ideals.

Now and then the editors of the *Times* and *Herald-Tribune* turn from their many diatribes on politics, taxation and the dismal state of the world in general to comment on public spirit.

It was gratifying to note that the recent meeting of the American Medical Association found recognition, especially our stand on prohibition, so ably set forth by the retiring president. It seemed to be a revelation to the laity that our profession was not afraid to speak out regarding the abuses of the Volstead Act and the foolishness of legislators, who, as Hamilton predicted of Congress, are apt to represent the lowest grade of their constituents and to seek their own selfish interests rather than the welfare of the State. His prophetic vision has been more than justified.

At last we have been recognized as true altruists, not in words, but in deeds. It is a good omen for us and encourages us to keep alive the high ideals which had become dimmed by the prevailing commercialism.—H. C. C.

The Paradox of Paradoxes

The evidence is overwhelming that genius derives from bad stock. This is not as we should like it to be, and it is easy to understand the resistance to the proofs. It is a dreadful thorn in the side of the eugenist particularly.

S. J. Woolf's recent description of Einstein is suggestive in this connection. He is "almost child-like . . . physically flaccid . . . almost fragile . . . even his handshake leaves one wondering as to whether there are bones in his hand. . . . It is doubtful if he even knows what is in his home. . . . Talking, he appears to be thinking of other things; gazing, he does not appear to be seeing the object at which he looks. In fact, these peculiarities are so marked as to appear almost abnormal." His wife finds him "terribly hard to manage." It would seem from Woolf's account that he dresses only at his wife's command and is then more or less dependent upon her for the details of collar, tie and hair.

What kind of stock bred this extraordinary man?

A line from Francis Thompson's *Hound of Heaven* is highly significant:

> Ah! must—
> Designer infinite!—
> Ah! must Thou char the wood ere Thou canst limn with it?

The Fee-Splitting Scandal

Dr. James Fairchild Baldwin, distinguished Ohio surgeon, washed some very badly soiled professional linen in the September issue of *Current History*.

The doctor admits the futility of publicity, so it seems a bit strange that he should select such a medium for his views.

However, he makes some telling points. On the basis of Dr. William T. Black's recent investigations he presents the startling estimate that not fewer than four out of every five deaths after major operations in the ordinary run of hospitals can be attributed only to incompetency on the part of the surgeons who operated, and of course incompetent surgeons make up the majority of fee-splitters. "This is certainly a terrible arraignment," says Dr. Baldwin, "but it seems to be a mere statement of actual fact." Then he quotes Dr. LeRoy Long's recent remarks before the American College of Surgeons to the effect that there are 30,000 untrained men operating upon moribund and hopelessly incurable patients, creating fake emergencies, and fiercely competing for fees. A case is cited in which such an operator offered 90 per cent of the fee.

The criminal aspect of the matter is now taken into account in a number of States, since, in the words of Dr. Rudolph Matas, the fee-splitting and incompetent surgeon "is a new and more subtle type of quack—a real crook." It has been well said by another that "a doctor who would be guilty of such an offense would steal his patient's wallet or watch if he thought he could do so without detection."

The old-time abortionist would seem to have been a beneficent figure in comparison with these modern gentry.

The State laws against fee-splitting have not been effective, which establishes a link between the abortionist and the fee-splitter.

The decline of the medical profession in public esteem and the increasing resort of the people to quacks of variout sorts are not very difficult to understand in the light of such conditions. Dr. Baldwin goes as far as to say that honorable members of the profession are rapidly diminishing.

Another thing which is not so very difficult to understand is the failure of the American Medical Association to tackle the dragon.

The Talkie Viewed Medically

One secret of the silent movie's great success was its appeal to the relatively or absolutely deaf, who make up so large a proportion of the populace. And now the "sale" of the talkie or sound picture to the people has to include the installation of earphones *throughout* the theatres.

Such devices, it appears, are unsuccessful as regards stage presentations; the natural stage voice does not reach the hearers well.

It is probable that a large factor in the decline of the "legitimate" stage has been increasing decadence in the general acuity of the sense of hearing.

Another thing to be taken into account is the fact that the talkie is addressed to even a lower level of intelligence than the silent movie, which would seem to suggest an increasing decadence in that sphere.

The promoters know their audiences—a depressing thought.

Hygienic Clothes

Considerable interest, of late, has been shown in the matter of suitable clothing, particularly for hot weather wear, from the hygienic standpoint. Women, it is agreed, dress far more comfortably and hygienically than men.

There is at least one clothing custom which prevails among men which ought to be changed. We refer to the wearing of trousers of ordinary fabrics against bare legs. Such garments cannot be thoroughly cleaned and absorb a great deal of objectionable material.

Frequent bathing in such a case becomes a good deal

of a farce, and the esthetic sensibilities alone ought to protest such a practice.

The remedy, of course, is the wearing of trousers that can be laundered. It is chiefly the commercial pressure behind such of our practices as are unclean which precludes a change for the better.

Perhaps, with the women courageously leading the way and baring the legs altogether, we, too, shall yet be enabled to discard the swathing of our nether extremities. What could be more unlovely and Victorian than trousers anyway?

Can a Million Dollars Be Kept in Jail?

A fact which adds greatly to the difficulty of keeping our malefactors of great wealth in jail, once they are in (a rare event), for the duration of their sentences, under the same conditions as poor and obscure offenders, resides in the frequency with which such gentry are actually sufferers from diseases which lend themselves readily to arguments and appeals for leniency. The lives they have led invite degenerative cardio-vascular and renal lesions prematurely, and they are often of a physical type which fundamentally favors illness in the later decades. From this point of view albumin, casts, high blood pressure and cardiac defects are assets in potential offenders of the type under discussion. Incarcerate them and they "lose weight" and threaten to "faw down and go boom."

Of course, leniency for the safe blower under similar circumstances arouses no enthusiasm.

We may be able to put a million dollars in jail but can we keep it there, things being as they are?

The Threatened Submergence of Individualism

Ramsey MacDonald prophesies that the next great outcry of humanity will be self-determination of the individual. "The world will in ten years be carved out into great economic territories which will recognize only the boundaries of markets. . . . What may be called 'social materialism' is growing vigorously, and during the next ten years it will become increasingly a problem for those who care about individual liberty. The self-determination of nations has been the great cry since 1914.. It will be displaced by the still more important cry of self-determination for individuals."

With the destinies of mankind in the hands of these syndicates what will be the fate of medicine, the last refuge of individualism?

So far, in the United States, despite the visible forces bent upon medical regimentation, we have successfully maintained our most precious heritage.

May it be ever so.

Eskimo Pie: New Style

It is said that a sugar has been introduced by a German scientist which, when treated chemically in a simple way, becomes edible alcohol in solid form. Since our prohibition laws are directed only against alcohol in beverage form, it is supposed that this delectable substance will not come under them. If this report is true it is another illustration of the futility of effort to regulate completely the behavior of "the other fellow."

Active Tuberculossi

It will mark a great advance in diagnosis when the generality of medical men give up the idea that elevation of temperature is the chief and most significant symptom of pulmonary tuberculosis or the *sine qua non* of activity.—*Weekly Bull.*, Dept., Health N. Y. C.

Miscellany

"America's Premier Physiologist"

A little short of a century ago a young army surgeon, William Beaumont, brought to Plattsburg a Canadian woodsman, Alexis St. Martin, whose life he had saved ten years earlier. The man was under a contract probably without its like. He bound himself to report to the doctor for examinations during a year, and to submit to the experiments desired, he himself to receive $150 in addition to "expenses, good sustenance, suitable housing, wearing apparel and washing." Young St. Martin became for this benefactor during that time a living human laboratory. The experiments of M. Claude Bernard, the French physiologist, were limited to animals, but Beaumont had been furnished a window by a wound, which could not be completely closed, through which he could observe the action of the human stomach in dealing with foods. It seemed a miracle that the young Canadians' life could have been saved, and Beaumont, who cared for him out of his own meager allowance, preventing his being deported as a pauper back to the Canadian wilds, thought at first only of restoring him to health. This he succeeded in doing so completely that the young woodsman could do heavy work.

It later occurred to Dr. Beaumont that his patient might be of service to science. He then began his observations which resulted in the publication, in 1833, at Plattsburg, of a book giving in detail 238 experiments, showing the relative digestibility of foods, the nature of the gastric juice, the temperature of the stomach in digestion etc. In the recently published second volume of the Dictionary of American Biography, Dr. Victor C. Vaughan, who devotes more than five full pages to his life, its vicissitudes and its achievements, states that the results which Beaumont set forth have been but little modified by subsequent studies and that most of his fifty-one conclusions are still accepted.

Beaumont was professionally recognized by the physiologists from many parts of the world when they gathered at Plattsburg on August 24, to unveil the tablet in his memory as "America's premier physiologist." The publication of his "Experiments and Observation on the Gastric Juice and the Physiology of Digestion" was "the commencement of a new era." With the possible exception of Claude Bernard, says Dr. Vaughan, no other man has made so important a contribution to the physiology of digestion.

Yet but few Americans realize their debt to this scientist. His human laboratory, the man "with a lid on his stomach," yielded to the call of the wold, declined to return for further experimentation and lived for twenty years longer than his benefactor. But the period of the unique contact brought such returns that it is written for all the future of America to know:

Every physician who prescribes for digestive disorders and every patient who is benefited by such prescription owes gratitude to the memory of William Beaumont.—*New York Times*, August 29, 1929.

How Dry Is Finland?

Of the several northern European countries which embarked on an era of liquor prohibition along with the United States at the end of the World War, only Finland today retains her original law. Rheta Childe Dorr, a journalist of long experience, visited the republic a few months ago and makes her report on "The Other Prohibition Country" in *Harpers'* for September. Even

discounting Mrs. Dorr's professional weakness for "writing a good story," the article is ammunition for American Wets and affords little to fortify the arguments of our 100-per-cent Drys.

Mrs. Dorr writes that she went to Finland in the sincere expectation that there she would find Prohibition operating under the best possible circumstances. It is a small country of homogeneous population with no immigrant aliens; the majority of citizens are farmers; there is no illiteracy, and "the women and the pastors of the State Church, the Lutheran, exert a strong influence in the religious and social life of the country." And we may remark parenthetically, that the Finns, as exemplified by such great runners as Ritola, Nurmi, and Stenroos, take pride in physical fitness. It would seem, therefore, that if Prohibition is to succeed anywhere it should succeed in Finland.

But it is a failure, Mrs. Dorr says. The people, for a century under the dominion of the Russian Czar, long had a notable temperance record. Before the war the annual consumption of hard liquors was 1.4 litres per person, compared to 7.21 litres in Sweden, and Great Britain and Ireland's truly majestic figure of 1.96 gallons per person. Both Finnish prohibitionists and anti-prohibitionists now agree, Mrs. Dorr maintains, that the figure is now about 2.4 litres per person.

Crimes of violence are increasing yearly, she reports, quoting statistics that show that total arrests of all persons have increased from 18,642 in 1924 to 21,105 in 1928; for women alone from 529 in 1924 to 1,027 in 1928; and for young persons (from 16 to 18 years old) from 147 in 1924 to 448 in 1928. Bootleggers are as prosperous as in the United States, but the standard Scotch and English liquors can be obtained at a price little higher than in Britain. A bottle of Dewar's whiskey, she writes, which retails in London for twelve shillings sixpence, can be bought in Helsingfors, the Fininsh capital, for thirteen shillings, or $3.25. The long and irregular coastline along the Baltic Sea with its thousands of islands, makes the smuggling of contrabany easy. The favorite drink of the masses, and especially of the young people, is a powerful intoxicant called "ninety-six," which means 96 per cent alcohol. Drunkenness on the part of a woman, which used to be considered a community scandal, is now relatively common, Mrs. Dorr writes.

"The prohibition law is a failure in Finland," she epitomizes, "as it was in Sweden and Norway, and as it has proved in the United States, and for the same reason. Enforcement against the will of a large minority of the people is impossible. The Finnish law, it is true, was passed with the consent of a large majority of the people, but that was in 1917, twelve years ago. Clearly a radical change in public opinion has occurred, for at the present time those same people are buying, at prices far above pre-war rates, nearly twice as much liquor as they consumed twelve years ago, or even twenty-two years ago, when the first prohibition law was passed. What has caused this change?"

Mrs. Dorr's explanation is that the Finns of a generation ago, like the older people of today, were a home-loving, hard-working, and intensely patriotic folk, whose sole ambition was to free their nation from Russian rule. They were simple-living, religiously-inclined, and imbued with the spirit of social reform which was also felt in England during the first decade of the present century under the leadership of Lloyd George and in the United States under Roosevelt. And when they obtained their independence in 1917, they adopted Prohibition in the same idealistic spirit. Further says the author:

> The older generation learned most of what they knew from the common school and the village pastor. The new generation learns from the moving-picture theatre with its news reels, and dramas of opulent life, the radio, the photogravure page of the Sunday newspaper, the cafes with their dancing floors, and the American jazz band. Thus the young Finlander, while he may remain a good Lutheran, no longer regards a church temperance society as an ideal form of recreation. Towards Prohibition his attitude seems to be neutral and indifferent. He knows that as often as he takes a drink he breaks a law, but as far back as he can remember the law has always been evaded. That's the worst of it. He is used to breaking the law and seeing others do it. It seems the normal thing to do.

But the government, Mrs. Dorr concludes, will not change the law, for, as a parliament leader told her, "Any retreat from Prohibition would be a moral retreat, and any political party that advocated it in this country would commit suicide."—*Boston Herald*, Aug. 22, 1929.

A Ghastly Record

(The statistics herein contained have been compiled mostly from the official records of vital statistics of the town of Brookline. They can be verified at the Brookline Town Hall or from the records of the Medical Examiner of that district.)

Several years ago, in the town of Brookline, Massachusetts, U. S. A., there was dedicated an institution called The Christian Science Benevolent Association Sanatorium. Its buildings, providing accommodation for something over one hundred inmates, cost over $1,000,000. They are considered among the finest examples of Tudor architecture in New England. It was announced in the printed matter distributed at the time, that this institution was not to be like a hospital, or the usual kind of sanatorium, but just "a place where expectancy prevails and hope is enthroned." The new institution was declared to be "not an almshouse," but a place where "practical benevolence" was to be dispensed to the extent of its capacity at $24.00 (£5) per week "and upward." This institution, built since Mrs. Eddy's decease in 1910, is ostensibly owned by what is known as The Christian Science Benevolent Association Corporation, but this is really but another name for the Directors of The "Mother Church" in Boston.

Notwithstanding that it is described as a place "where expectancy prevails and hope is enthroned," its death record is appalling. For some reason yet to be explained, death certificates were filed at Brookline Town Hall in a large majority of cases in violation of the rule requiring that the full name of an institution be recorded in a certificate when death has occurred in any *institution*. Only the street number on Boylston Street was given in almost all of these cases, just as the record would have been if decease had occured in a private residence. Unless an inquirer is familiar enough with the street numbers and locations to identify scores of these certificates as recording deaths at the Christian Science "Sanatorium," it would appear that a death at that institution has been an exceedingly rare event. Thus has the official public death record concealed, rather than revealed, the facts.

Among the persons who have passed away at the Sanatorium during the first five years of its existence are the following. This list is as complete as it has been possible to secure at this time, and includes some of the most prominent Christian Scientists in America.

Sue Rockel, Mable R. Steere, Mary D. St. John, John A. Ring, William A. Judson, Alice Seward Brown, Augusta F. True, Annie L. Harper, Lola W. Choate, Margaret W. Carmichael, Lydia Clement, Estella Rose, Julia S. Bartlett, Alice M. Cutler, Elizabeth W. McMillan, Lillian M. McAdow, Laura B. Jennings, Mrs. Anna W. Nichols, Mrs. Vinnie Patterson Fox, Wilfred E. Cawker, Mrs. Hattie B. Crouser, Miss Christine Johnson, Martin Francis Tobey, Walter E. Mitchell, Lilly Emma Fales, Susan M. Bailey, Adelaide E. Lewis, Elizabeth A. Bacon, Flora S. Mackinley, Stella V. Pickering, Clarabelle Davidson, Mary E. LeClair, Warren O. Wright, Lelia Holt Adams, Clarence T. McFarland, Elizabeth S. Johnson, Gertrude C. Smith, Maria Ayer, Lynda E. Brown, Albert Manetey, Mrs. Olive M. Cary, Mrs. Bertha Jennings Ames, Frank S. Miller, Mrs. Kathryn N. Stall, Lorenzo B. Newell, Miss Louise Kellogg.

Agnes Gertrude Upham, Florence M. Perry, Chloe Carr, Lewis S. Adelson, James D. Sherwood, Ida M. Griffin, Laura S. Victorson, Hanson W. Wheeler, Susan Parker Perkins, Harriet M. Sawyer, William Chase, Louisa C. Burton, Mary E. Marble, Helen A. Barnum, James J. Riegel, Fred H. Jerome, Esther Elizabeth Higbee, Adelaide I. Smart, Lenore Rebecca Lusty, Jennie C. Holmgren, Mary N. Jones, Mary C. Bennett, Milton A. Becker, Milton M. Gilmore, Elise D. Strobel, Lucy C. Carpenter, Otto Presser, James J. Rome, Mary Alice Trumbull, Lillian R. Chase, Carrie L. Lindley, Charles F. Whitmarsh, George O. Pelgram, Alda A. Vandergrift, Elizabeth M. McClure, Annie R. Hulsbush, Mary G. Chadwick, Elizabeth G. Bacon, Orrin H. Wilkins, Mary C. Hire, William A. Akin, Mary C. Robinson, Jessie F. Grant, Sorrell Lamb, Martha I. Lambert, Adolph F. Youngston.

Bertha L. Simpson, Susan J. Sleeth, Mamie E. Stein, Augusta S. Stitch, Maud B. Whitehurst, Robert Bruce Warren, Ella F. Ellison, Edwin N. Lublin, Eva Krummic, Ida V. Bishop, John C. Slayton, Mary C. Hiscock, Luella C. Hill, Zella M. Rothrock, Elizabeth Mack, Kathryn Anne Tate, Lillian C. Hanson, Cora E. Stough, Adah E. Binning, Georgianna W. Deming, Edwin Forrest Needham, Annie Laurie White, Irene M. Wagner, Albert E. Miller, J. Lee Robinson, Alice E. Tower, Elizabeth H. Burgess, Willis J. Marsh, Lucy A. Cummings, Lillian W. Dodd, Phoebe L. Haines, Minnie R. Miller, Augusta W. Weber, Honora M. Circle, Harriet W. Jones, Pearl E. McCormic, Lyman H. Howe, Luella M. Edwards, Susan R. K. Hoyt, Louise B. Warner, Corrine C. Donahue, Louise M. S. Bergner, Leo Wellhouse, Florence M. True, Adelaide C. Patten, Mary J. Cutting.

Annie Rodda, Grace D. Parsons, Cora Elenora Thomas, Ernest A. Lothrop, Marie Chapman, Mary M. Blake, Alice Sinton, Gertrude D. Close, Emeline E. Durgin, Annie Catherine Wing, Margaret B. Kleinfelder, Ida E. Smith, Lucile Halston, Harry W. Saunders, Alice C. Churchill, Anna K. Spencer.

In addition to the above, the following is a list of persons who died in the town of Brookline under Christian Science treatment during the same period, a list which, though not complete, includes the "overflow" from the Benevolent Association Sanatorium which has gone to so-called private Christian Science *sanatoriums* in Brookline. These are all conducted by "loyal" church members under the disciplinary control of the Church Directors. Among these places were "The Rainbow at 162 Mason Terrace, "The Home," at 22 Beals Street, and "The Retreat," at 30 Naples Road. This list includes Christian Scientists who came to Brookline from many different states and from Canada and England, in order to be near the official central spot "where expectancy prevails and hope is enthroned." Many others, representing a large majority of sick Christian Scientists, were sent to private "Christian Science sanatoriums" in Massachusetts outside of Brookline and also outside the State of Massachusetts. These private so-called Christian Science "sanatoriums" have sprung up all over the world, during the past few years. They are patronized by Christian Science church officials and officially licensed Christian Science practitioners, for persons who are placed under their "treatment." It has been stated officially in the House of Commons that there are between thirty and forty of these sanatoriums in England and Wales.

Cara Macy Foss, Annie R. Crafts, Frances Storm Mattox, Carrie Evelene Cady, Emily E. Pentecost, Caroline R. Holt, Rose A. Beebe, Thomas Radden, Jr., Harriett F. Jackson, Mary A. Rhodes, Harriett Howe Stacy, Marion W. Lallor, Laura Lathrop, Earl Russell Fretz, Mary B. Randall, Clarence A. Dow, Adelaide Lucy Jenney, Arthur E. Blanchard, Virginia M. Gay, Elizabeth C. McCaulley, Elizabeth A. Moore, Judith Roselth Knapp, Francis B. Corcoran, Elizabeth C. Magee, Carrie I. Rowell, Juline E. Rothwel, Charlotte Carey, Levi L. Wilcutt, Anna E. Baker, Eleanor Ross, Lydia A. Wood, Ella S. Rathvon, Herbert M. Cooper, Dorothy T. Howard, Herbert L. Dunbar, Emma Bird Wing, Ralph B. Corby, Frances L. Dewey, Joanna Shadie, Charles F. Chase, Emma F. Steele, Hilma M. Zellerstrand, Kenneth Wing, Lillia M. Bearns, Elizabeth F. Adams.

Among the tragedies, which have occurred at the Brookline Christian Science Sanatorium was the decease, under unusual circumstances, of the distinguished architect who constructed the Sanatorium buildings. "Patients" have been found dead in bed, or dead in their chairs, under conditions as gruesome as could be imagined. One tragedy related to the decease of a nationally known motion picture producer, who was dead while his family in a Boston hotel were rejoicing over his healing, as reported from the Sanatorium.

Brookline is the home of three medical hospitals of national reputation—the Corey Hill Hospital, the Brookline General Hospital, and the Brooks Hospital. In point of death, during the five-year period since the Christian Science Benevolent Association Sanatorium was established, and which the above figures cover, almost as many persons died in the Christian Science Benevolent Sanatorium as in all three of these famous medical hospitals together, and eighteen more Christian Scientists died in Brookline during this period than in all three of them.

If the total deaths in Brookline under Christian Science treatment during the period, as compared with those in private medical hospitals in that town for the same time, are compared with the small percentage of Christian Scientists in Brookline to the total population of that town, the resulting figures are staggering, as they have been declared to be during the past few years in many other localities.

Paresis and Tabo-Paresis Treated With Tryparsamide

1. Out of forty-one patients treated by tryparsamide and mercury alone, between May, 1923, and May, 1925, ten have been brought back to sanity of at least four years' standing and had their physical health restored. Out of forty similar cases treated at a later date by malaria and tryparsamide we had sixteen patients restored to a like degree; the results under malaria and tryparsamide as compared with those from tryparsamide alone are sixty per cent better, also they were much more rapidly accomplished.

2. In none of the ten who achieved satisfactory remissions under tryparsamide is the serological picture negative at the last examination, but in every case there has been a great and, so far, permanent, improvement.

3. We believe tryparsamide to be a great improvement on salvarsan in cases of cerebrospinal lues.

4. The results in tabes after tryparsamide have been very disappointing, especially in securing relief from pain. We are thoroughly convinced malaria is better from this viewpoint.

5. Laborious precautions must always be taken to detect a beginning optic atrophy, and the danger from this source is very real and acute; we had to stop treating twenty-five per cent of this series because of its imminence and we had one case of total blindness. In the malarial series only two developed.

6. As a result of our nearly six years' experience we now believe that tryparsamide should only be used:—

(a) Where the patient's physical condition is too poor to withstand the chills of malaria.

(b) As a follow-up treatment after malaria, except in tabetic types where originally the crises were very severe; optic atrophy is much less likely to occur in previously treated malaria cases.—Menzies, *Canad. M. A. S.*, Mch., 1929.

Anemia Due to Myxedema

It is not uncommon for myxedema to cause anemia.

Correspondence

"A Loud Cry or Noise"

To the Editor of THE MEDICAL TIMES

I want sincerely to thank you for your appreciated and kindly mention of me in your issue for September, 1929. I want to say that I always read the MEDICAL TIMES with profit and that I regret you borrow your vituperative adjectives from the J. A. M. A. and spell them incorrectly as well. My dictionary, which is standard, distinctly gives the word as "yaup"—meaning " a loud cry or noise". I shall, at my earliest convenience, be delighted to give you medical chaps a complete list of vituperative adjectives all properly spelled, that you many hurl them at me more correctly. My facts, in case you are interested—and apparently you seldom are as you all merely call me bad names, an exercise at which I refuse to reciprocate—were drawn from H. H. Moore's "American Medicine and the People's Health." He superintends fact collection for the Committee on the Cost of Medical Care. The J. A. M. A. editorially (Aug. 10, 1929) says that it is cooperating with this committee and regards its workings with respect. Mr. Moore in May, 1929, *American Journal of Sociology*, says that the profession is disorganized. In Sweden the profession is organized and there is no better medical attention to be had on the face of the earth than there. When the president of th local section of the A. M. A. called me bad, naughty names in the *Washington Post* and I temperately replied citing my authorities he wrote a friendly letter inviting me to dine with him. That is Wm. Gerry Morgan and he is about as good as they come isn't he? He did not reply and show me up because I had my authorities. I have not studied this question for 8 years without finding out something about it. Even then I do not know how to call names—so excuse me there. Thanking you again for your mention of me I am, with best wishes for scientic medicine.

Cordially yours,
T. SWANN HARDING.

Mt. Rainier, Md., September 3, 1929.

Doctors of Medical Practice and the Cost of Medical Care

The problems of medical practice and of the cost of medical care are today like a patient suffering with a superfluity of advisers, some scientific, some logical, some informed; others ignorant, biased or with the one sided perspective of the situation that a chiropractor has in studying the ailments of the human body. Finding a lack of competent and, perhaps, of entertaining writers among those who are informed on the subject, popular periodicals have accepted the contributions of the propagandists and loud-speakers. The yawping, sneering, exaggerated and, indeed, comical lucubrations of T. Swann Harding, who admits that he wrote a hundred and ten articles last year, have stirred a few physicians to anger, but have been met in general by the the medical profession with yawns and with pity for the editors. Are these contribution really worthy of space in periodicals that are presumed to be devoted to thought and sound opinion? Of a different type is a recent contribution by Mr. Embree, director of the Rosenwald Foundation. It appears in full in the New York *Times* and in brief in the *Modern Hospital*. After all, the medical profession might have anticipated from Mr. Embree something serious in the way of investigation and data rather than sarcasm, half-baked opinions, and sops to the multitude. In his contributions are accumulated most of the invective that has appeared in the wild statements of sensation-mongering publicists in the last five years.

Mr. Embree begins with the assertion that vociferous elements of county medical societies act as though medical service were something that belongs to the doctor and he emphasizes that the patient is equally concerned in the illness. Leaders of medicine have always urged that the patient's interest is paramount. Mr. Embree knows that. But he should realize also that the responsibility for the patient, legal and in every other way, is the responsibility of the physician. Even if the Rosenwald Foundation, the Public Health Institute, the Cornell Clinic or the Mayo Clinic engages in medical practice, the responsibility for the patient is the responsibility of the doctor or of the doctors who attend him. Mr. Embree, when he gets sick, wants a doctor to be responsible for getting him well. That personal relationship is not to be avoided by any species of inspired reasoning. The pity is that the public should be made to feel that the organizers and the executive secretaries have worked out, or are going to work out, some other system. No matter what system of practice eventually develops in our fair land, doctors are going to do the practicing and carry the responsibility.

Mr. Embree repeats the charge that the public has furnished the hospitals, medical schools and laboratories to the medical profession as a place in which they may work, and that therefore, presumably, the doctors owe a great debt in return. The fact is that doctors make the institutions that have been mentioned. Without physicians and medical investigators such institutions as the great Rockefeller Institute, the university hospitals, the leading medical schools, would be only four walls and a lot of apparatus. These institutions have been made by the physicians who have for more than a century taught without remuneration, taken care of the poor without remuneration, lectured and written without remuneration, given themselves to mankind. An obligation, Mr. Embree should realize, also has rested and always will rest on the side of the public. Pray that this mutual obligation may continue. Let the medical profession always be a profession of service. On the day when the economists, the merchants, the brokers and bankers and the executive secretaries put medicine on a business basis the heart will go out of it and the people, unless they too have degenerated into robots, will suffer sadly.

A few years ago Mr. Hugh Fullerton, noted writer on baseball statistics, contributed to *Liberty* a ringing attack on the Oath of Hippocrates, asserting that the medical profession was controlled by this code. He had apparently never heard of the Principles of Ethics of the American Medical Association, adopted almost a hundred years ago and revised at frequent intervals to meet changing conditions of human life. From Mr. Fullerton this was understandable. He was more concerned with base-stealing than with exploitation of patients. But surely Mr. Embree has heard of the Principles of Ethics. He is not quite fair when he attacks the Oath of Hippocrates and intimates that physicians are considering as inviolable a code adopted in a previous age. Of course there are some things that disturb Mr. Embree particularly. The economists and executive secretaries for the large foundations believe that better distribution of medical care will be had if medical institutions can advertise their wares to the public. The medical profession has always opposed advertising as bringing far more evils than benefits into medical practice. Mr. Embree seems to think that the Public Health Institute, its methods and results are good models for medical practice to follow in the future. Indeed, he makes a case for it in both of his articles. He feels that *The Journal* should not have asserted any venality on the part of the press in relationship to medical advertising. He does not mention *The Journal* but he says: "Certain medical journals have accused newspapers of taking an interest in the public aspects of medical service because of the hope of getting paid advertising that might result from a policy of public announcement. This seems cheap and utterly unjustified abuse." Perhaps the executive secretary of a philanthropy can afford to be naive; but there are times when naïveté becomes pitiful. Thus Mr. Embree asserts that if newspapers were governed solely by commercial interests they could get a hundred thousand dollars from quacks for every thousand dollars spent by physicians. Surely he knows that newspapers do not carry nostrum advertising because it is bad business to carry nostrum advertising. True, the press is developing a series of ethical principles. But the law and public opinion and the advertisers of honest goods forced the disappearance of nostrum advertising. There is, indeed, a woeful tendency on the part of much of the press to relapse whenever the slightest occasion offers. Even that portion which Mr. Embree particularly defends has carried during recent years and continues to carry the announcements of "Koniola" and of "Lesser Slim," in addition to those of the Public Health Institute.

Repeatedly in his articles Mr. Embree is gratuitously sarcastic. One can hope only that it is because he is uninformed rather than malicious. Thus he says to the world at large through the *Times* and to the superintendents of hospitals in the *Modern Hospital*, the commercial organ which dominates the hospital field, a field which has not, like medicine, a real independent voice of its own:

Because of the distinguished position of William and Charles Mayo and their associates, even the bitterest critics of organization in medicine have found it convenient to omit this clinic from their attacks on such services.

It is of course for the brothers Mayo to inform Mr. Embree wherein he errs. No doubt he was absent in China during the development of the Clinic. With the cooperation of the medical profession, this organization is kept in accord with what experience has shown to be proper. Today the institution is a part of a great university turned over to that type of organization by the physicians who built it. It was after repeated meetings with the state medical society of Minnesota and with representatives of the medical profession that the arrangement by which the Mayo Clinic operates was finally worked out.

Neither time nor space permits a complete analysis of Mr. Embree's communication. After all, would it be worth while? Through it there runs the sentiment that medicine must be organized, that it must be put on a business basis. If the Rosenwald Foundation is entering the field of medical care with this as its fundamental consideration, its plans may well die aborning. At the very time when Mr. Embree launches his diatribe one

finds Lord Dawson of Penn, among the most noted of British leaders in medicine, speaking thus to the prize men of the London Hospital, as they prepare to enter medical practice:

"It is to the field of general practice that we need to pay attention, for it would be a sorry day for any country were general practitioners to become weak in their work or their influence. This is now a danger in certain countries of the world. . . .

It is said that the problem of general practice, in its relation to hospital provisions and the problem of how to treat patients of limited means, has been solved in Germany and the United States. I tell you that it has not been solved anywhere."

Has Mr. Embree any solution to offer in the problem of providing medical care to all the people at a price that they can afford to pay? If he has, it does not appear in any of his contributions on the subject. He merely says repeatedly that medicine must be organized. Has he a plan of organization that would certainly accomplish the result? He has not! Indeed, in his desire to satisfy the interests that employ him he rushes about hither and thither listening to this scheme and to that, beckoned by this organization and by that, trying to find the answer in a group, in a university hospital, in a Public Health Institute, in a hospital center, in Mr. Filene's medical guild, in anything that will seem to offer some solution to the problem. In all this he fails to realize one essential that the philanthropists and the social workers and the economists must realize: the rise in the cost of medical care is a reflection of the increased knowledge that has come to the practice of medicine. The bill of the physician is a small portion of this cost. The *x*-rays, the laboratory investigations, nursing service, hospital care, and the work of specialists are new factors in medical care. Even with the most perfect organizations, they will still be costly. And if organization and slightly lower costs are achieved at the risk of disturbing the personal relationship between physician and patient in such a way as to mechanize medical practice, the gain will be found a futile one. The patients themselves will never be satisfied.

It is a pity that Mr. Embree permitted himself to be urged to talk before he was ready. Most physicians and most economists and most social workers are willing to wait until the Committee on the cost of Medical Care, a group with which the medical professional is cooperating whole heartedly, has brought into the situation data on which to base reasonable action for the future. Nothing is to be gained by inciting the thoughtless and the uninformed into peevishness against the medical profession. The great foundations that are entering into the problems of medical care must themselves have medical cooperation in carrying out their plans to the best advantage. They cannot succeed without it. Mr. Embree seems to have the same conception of cooperation that Mr. Kingsley so aptly characterized a few years ago. "You coo," says Mr. Embree, "and I'll operate."—Editorial *J. A. M. A.*, Aug. 10, 1929.

"State Medicine" and the Doctor

The medical profession should read the editorial entitled "Doctors of Medical Practice and the Cost of Medical Care" appearing in the *Journal of the American Medical Association* of August 10th, 1929.

It is quite evident that the evolution that is taking place in medicine during the present era of mechanics and standardization has intrigued many individuals not of the profession and it is well for physicians to consider the interest taken in the practice of medicine by laymen in America.

Reconstruction of the legal machinery of court procedure has been and may again be the result of the activities of commissions of laymen. There is no reason to assume that a similar situation may not develop in the medical world.

State medicine is an irritating challenge to the average physician busying himself with the interest and welfare of his patients. All too often, however, he passes it by with a shrug of his shoulders; while he is so doing social uplift groups, endowed commissions, and self-appointed committees of well-meaning laymen are conducting investigations, establishing medical surveys, promoting clinics not officered by physicians, and in other ways wedging themselves into positions of prominence and power. From the eminence that they attain a subtle and vigorous influence can and will be exerted to modify the medical practice of the future.

It is to be hoped that these powerful groups will not only consider the interests of the physician, but will also give serious thought to the interests of the community.

As one reads one gets the impression that the force that may be developed will be applied eventually as pleases these non-medical groups. They do not express themselves with finality as to the substitute for the present type of medical service which will eventually be presented in the form of legislation for official approval but they have stated enough to put the physician on his guard and it is to be hoped that the intelligent layman and worker in the ranks of preventive medicine will appreciate the incompleteness with which they rush in where experience fears to tread.

The authors of much that has appeared in print are public health economists, outstanding lay friends and kindly critics of the medical profession. In a more or less attractive fashion they have presented the mass of information, deduction and prognostication which should interest any one, including the physician who is not entirely blind to the possibility of state medical legislation.

With the increasing complexities of society, adjustments have become necessary in all the activities of life. It is fundamentally true, however, that the personal relation of physician to patient can never be lost entirely. No matter what system eventually comes into being, the medical practitioner is going to practice medicine. The individual practitioner will always have to be responsible under any system. Individualistic general practice is disappearing as groups of physicians organize to cover certain needs in specialized medicine—whether the organization be in hospitals under public or private auspices, or in privately owned clinics. This is observed in small cities and towns as well as larger centers of population. At the same time it is to be observed that organization does not displace the need for personal relationship.

There are, of course, the larger medical problems with which private practice is unable to cope, such as the control of contagion, mental disorders, drug addictions and certain specific conditions like malaria and hook worm disease.

Protection of the individual citizen through the principle underlying workmen's compensation would appear to be an essential factor for the best interest of all concerned requiring that the state play a part in the solution of all these problems. While this is clear it would also appear equally clear that flexibility is essential in order that the personal relationship may be maintained and freedom of choice left with the individual.

If under private practice, shortage of personnel, hospitals, clinics and convalescent institutions develop, to whom will the communities look for assistance? If present medical service is too costly, if maternity service charges result in articles in the lay press on "The high cost of babies," if the economic burden of illness is too much for the great middle class, where will reform begin?

If there is a lack of interest in disease prevention amongst physicians, to whom must the public look for aid?

The state has already done much: special clinics, diagnostic laboratories, school health inspections, state university health service, infant welfare work, employment of physicians by towns (as in New Hampshire),—all these indicate that when necessity calls, organized state control will be created. In like manner, governmental hospitals, tuberculosis preventoria, community hospitals, health center work, pay clinics, health institutes, industrial medical organizations, medical weeks, health insurance —all indicate that agencies outside the profession have organized in the hope of extending aid in the dissemination of health.

We may be certain, therefore, that the future promises further organization in this direction. The question with us is, "Shall we co-operate and assist, and lead when we can, or shall we refrain from co-operation and obstruct?"

As an indication of the point of view of the Secretary of the Committee on the Cost of Medical Care physicians should read Mr. Harry H. Moore's "American Medicine and the People's Health." Laymen and health workers are reading it. Mr. Moore's final thought is—if far-sighted men, "statesmen" he calls them, in private medicine, in public health work, in social sciences and in legislative bodies will unit in attaching the forces of ill health, there will be en elimination of unnecessary suffering, disability and loss of life. Quite enough to arouse our intelligent interest in a problem that looms large in the not-remote future!

Contrast with this the statement of Lord Dawson of Penn as quoted in the editorial in the *Journal of the American Medical Association:* "It is to the field of general practice that we need to pay attention, for it would be a sorry day for any county were general practitioners to become weak in their work or their influence. This is now a danger in certain countries of the world. . . .

"It is said that the problem of general practice, in its relation to hospital provisions and the problem of how to treat patients of limited means, has been solved in Germany and the United States. I tell you that it has not been solved anywhere."

With Dawson of Penn, all clear thinkers must agree. Nor will the problem be solved without the active practitioner, specialist and generalist, sitting in at the conference and contributing of his intellectual knowledge and practical experience.—Editorial *Long Island Med. Jour., Sept.*, 1929.

The Physician's Library

The Man a Woman Marries. By Victor Cox Pedersen, A.M., M.D., F.A.C.S. Minton, Balch and Company, New York. 1929. Pp. 226.

Pedersen's work, as always, assumes character, high principle and intelligence in his readers If, in the words of Nicholas Murray Butler, everything depends upon one's capacity really to know what is truest and best, which in turn depends upon one's acquisition and use of the power to think and discriminate, then one must come into possession of a body of principles of life, of thought, and of conduct that will offer both a baseline from which to measure and a cornerstone on which to build in approaching the understanding and interpretation of life's phenomena. Pedersen offers such a body of principles with respect to the sexual life which offsets the narrowness, selfishness and loose moral fiber too often evident in this sphere of thought and action. In this cynical, disillusioned, and more or less unprincipled age, large powers are called for in one who seeks to justify principles of any kind, and Pedersen displays them.

A useful evaluation of the place of Pedersen in the sphere of sex education, as illustrated by this and his former book, *The Woman a Man Marries*, is to be found in his similarity to Paul Elmer More and Irving Babbitt in the field of literature (Elder Generation). They, as described by Gorham Munson, represent solidity, definiteness, extensive scholarship, the maintenance of classical religion and classical humanism, conservatism in general outlook, firm accomplishments, ripeness and profundity of judgments, totality of view, moral value, and character. They have resisted what they conceive to be an underlying drive toward decay, disintegration and anarchy.

We know what the Middle and Younger Generations in literature (and sex education) stand for. As Munson sees them, the former stands for an emotional recoil from the intellectual and ethical discipline of its elders; Mencken and his tribe are representatives. The latter stands for sophistication, romanticism, esthetic considerations, skill, technique, suspicion of the Middle Generation's enthusiasms, with general attitudes unformed. And both of these groups stand for certain things, at times, of which the less said the better.

So the parallels are complete, and they show how closely related thought is, after all, in the different strata of society.

Pedersen's view of sex, then, is simply that of a civilized man. Those disgusted with the neo-paganism in this sphere should turn to him for light and guidance.

The Road to Health. The Jayne Foundation Lectures for 1929. By C.-E. A. Winslow, Dr.P.H., Professor of Public Health, Yale School of Medicine. Pp. 151. New York: The Macmillan Company, 1929.

The three chapters which make up this little book deal with Man and His Environment, Learning the Game of Life, and The Physician in the Modern State. In the last chapter the author deals interestingly with the question of State medicine. We concur heartily in his belief that 'the daily habits of human beings cannot be changed by legislation; . . . if we really want our people to practice healthy living, that end can be attained only by the slow and arduous process of education."

New and Nonofficial Remedies, 1929. Containing Descriptions of the Articles Which Stand Accepted by the Council of Pharmacy and Chemistry of the American Medical Association on January 1, 1929. Cloth; 5 by 7½ inches; pages 485 + xlviii Chicago: American Medical Association. 1929.

This useful book has reached the dignity of being grouped with the Pharmacopoeia and the National Formulary in the preface of Sadtler's Chemistry. Indeed, in many physicians' offices it is doubtless ranked above either of the official volumes. It deals with the medicinal products sold principally on physicians' prescriptions, giving the names of their proprietors, so it is a book most useful for reference by both pharmacist and physician. The descriptions of accepted articles are based in part on investigations made by, or under the direction of the Council, and in part on evidence or information supplied by the manufacturer or his agents.

The grouping together of articles having similar composition or actions is continued in this edition, each group being preceded by a general discussion. These general articles have been revised where necessary to bring them up to date. Such revisions have been made in the general articles on Cresols and Cresylic Acid Preparations, Ergot, Metallic Peroxides, Pituitary Gland, and Radium and Radium Salts.

There appears for the first time a list of "exempted articles" which the Council has decided to publish. They comprise medicinal products which have been examined by the Council, and which are marketed under descriptive, nonproprietary names with well established therapeutic claims, and nonmedicinal articles which are not advertised as therapeutic agents, the composition of which is sufficiently disclosed to permit judgment as to their harmlessness or safety, and the use of which under ordinary circumstances is, in the opinion of the Council, not contrary to the public welfare.

The book contains a good index. Physicians and pharmacists desiring to keep abreast of progress in the field of approved remedial agents will find this a most excellent reference volume.

Outline of Preventive Medicine for Medical Practitioners and Students. Prepared Under the Auspices of The Committee on Public Health Relations of the New York Academy of Medicine. 21 contributors. Editorial Committee: Frederic E. Sondern, Charles Gordon Heyd and E. H. L. Corwin. New York: Paul B. Hoeber, Inc. 1929. Pp. 398, including index. Price $5.00.

This is a much needed presentation of the subject of preventive medicine, which is rapidly and properly becoming the keynote of modern practice. Its twenty-one chapters, following a Foreword by Charles L. Dana and an Introduction by the Editorial Committee, are the work of noted experts, and are uniformly excellent in style and content. The reading of them will go far to inspire the same enthusiasm for preventive principles and technic that is already felt for the other procedures that make up our resources. The field covered is highly comprehensive and the teachings, if applied, would mark an impressive step forward. We think it is the *duty* of every progressive practitioner to assimilate thoroughly the entire contents of this work, and to apply them wherever possible.

Some Conclusions as to the Evolution of Clinical Medicine and Surgery in Relation to the Preservation of Health and Life

1. The profession of scientific medicine, organized before the advent of Christianity, is the eldest of learned professions. Spiritually, morally, and scientificaly, in all civilized countries, it is outstandingly the recognized authority in the prevention and cure of disease. Like the great religions of the world, it recognizes no geographical or political bounds, but unlike the great religions, it has no competitors. It is the one authority in scientific medicine recognized by all civilizations.

2. For centuries scientific medicine was practiced as an art and every scientific truth employed to make its authority more worthy and reliable. With the development of the exact sciences, it has strengthened its art and made more definite its authority and accomplishment by appropriating the proved truths of modern science, until it is now known, and properly so, as the science of medicine.

3. As we have shown, problems of disease, one after another, have been and are being conquered, and not only the trained physician has this knowledge, but the educated layman, too, is prepared to accept preventive and curative scientific medicine as the recognized authority; and rapidly the public is improving the opportunity to keep fit and submit to periodic surveillance by the practitioner of scientific medicine.

4. The thorough physical examination of millions of soldiers in the great war, proved the value of scientific medicine, and convinced millions of men of the wisdom of a periodic physical audit, under the supervision of scientific medicine, to keep themselves well. Through systematic propaganda advocating preventive medicine to conserve personal health, the general public has become aware of the value of periodic health examinations; labor has been convinced of the value of keeping well; and the industries, as an economic asset, have been induced to establish scientific facilities to keep their employees to the highest degree in good health.

5. Change of opinion has been wrought in the minds of the laity, in their attitude toward the relative wisdom of periodic audits to preserve health, rather than to wait for illness to make evident a possible incurable condition. A wholesome evolution in the practice of medicine is resulting, and it promises to become a boon that will preserve personal health to the maximum degree, and afford satisfaction to the scientific practitioner of medicine because of ability to practice his profession with greater precision and success.

6. The American College of Surgeons has occupied an important position in this movement, which must command the support of the teachers of medicine, the practitioners of medicine, the authoritative societies of medicine, the Jour-

(*Concluded on page* 20A)

(*Concluded from page 296*)

nals of medicine, and through all dignified means of publicity, it must educate the public to the necessity of co-operation with scientific medicine if they are to be protected from illness, and the happiness of their lives enhanced.

7. Statistics show that 25,112,309 individuals in the United States are employed in industrial occupations. According to our limited survey, one-half of these individuals receive complete medical service and periodic supervision; conservatively we estimate that of the total employed only one-fourth of these receive this service, or 6,278,077.

In the U. S. Army, Navy, and Marine Corps 250,188 of their personnel receive this thorough service, which is extended also to the members of their families. On the basis of four members in each family, this brings the estimate to 1,000,752.

There are in the elementary and secondary schools, universities, colleges and professional schools (continental United States) 27,381,816 pupils and instructors. Our survey shows that three-fourths of these receive medical service and periodic supervision, but conservatively we estimate only three-eighths, or 10,268,181.

Summary

Individuals in industrial occupations who receive complete medical service and periodic supervision (estimated)	6,278,077
U. S. Army, Navy and Marine Corps, and members of their families (estimated)	1,000,752
Pupils and instructors in elementary and secondary schools, universities, colleges, and professional schools of continental United States (estimated)	10,268,181
Further, it is estimated that an additional 3,000,000 men and women, not included in the above, receive complete and thorough periodic health examinations	3,000,000
Total in these four classifications who receive complete medical service and periodic supervision (estimated)	20,547,010

8. Through our recent research and study with the industries, labor, insurance, indemnity companies, governmental, state, county and civic authorities, our universities, colleges, high schools, and primary schools, others in their preventive health activities, from our direct questionnaire to our most influential practitioners of medicine, there is convincing evidence that the public is rapidly accepting the policy of co-operation with scientific medicine, and the practitioner of medicine is more and more willing to do his part, all of which offers conclusive proof that within the next ten years, the momentum of this evolution will find 50,000,000 of our people accepting the program of yearly health audits to conserve personal health, as readily as they now accept the protection provided to the masses by public health activities.

9. The health inventorium—which brings into the strong trinity of cooperation the scientific medical practitioner, the standardized hospitals, and the laity—when thoroughly understood and accepted, will insure to every practitioner adequate facilities to make thorough examinations, and to the public a thoroughly reliable service.

10. The questionnaire to internists and general practitioners reveals a keen interest in observation and study of the insidious diseases of middle and advancing age—the degenerative diseases, and most of them have expressed the definite opinion that yearly or semi-yearly health examinations will reveal these diseases in their incipiency, afford opportunity to modify and postpone the progress of many of them, and definitely prevent the development of some of them. Inasmuch as one-half of our yearly deaths are attributable to diseases which reap their harvest in man's years of greatest usefulness, the significance of this authoritative information is apparent.

11. This review of the evolution of the progress of clinical medicine and surgery emphasizes our responsibility as practitioners of medicine. We must give service to the utmost of our ability, and with the lay public must rest the responsibility of accepting it. Volunteer acceptance will:

(a) Preserve rather than restore the health of 100% of the people, to the greatest degree possible through the sciences;

(b) Require that practitioners of medicine shall be educated in the basic sciences before they may be licensed to practice the healing art;

(c) Make readily available to medical schools all facilities necessary to teach scientific medicine, and to preserve modern research methods in the laboratories by animal experimentation;

(d) Employ all dignified publicity methods, guided by scientific medicine, to enable the public to recognize the reliability of scientific medicine and to distinguish it from the subtleties of uneducated pretenders and imposters.

12. This review estimates that approximately one-fourth of the laity are now different to the benefits of scientific medicine, and that approximately another one-fourth are antagonistic to it, the victims of sophists, quacks, and other unscientific practitioners. While this affects detrimentally the individuals of adult life whose wisdom should guide them to choose judiciously, and with whom it is futile to protest, unfortunately it also affects their innocent children and dependents, and results in much unnecessary sickness and many premature deaths. The increased health rate, and the number of lives saved in 25 years of this century by the application of scientific medicine, proves that the refusal of this large proportion of our people to accept our aid without doubt accounts for much unnecessary illness and suffering, and at least 17,581.2 preventable deaths each year.

13. It is my wish that this review may aid to convince the people that one-half day each year should be set aside for a comprehensive health audit of each member of every family. As physicians we know the essentials, and the details of scientific medicine. We believe that the layman and woman from childhood should have a convincing knowledge of the essentials of preventive medicine. This knowledge must be imparted by dignified publicity methods; by teachers who are educated physicians. If this reasonable program is accepted and acted upon (and the present attitude of the people indicates that it is being accepted and adopted), I predict that our estimate of longevity will show an increase from 58 years in 1920, to 68 years in 1930, and what is of greatest importance, a decrease in preventable illness that will add immensely to the wholesomeness and happiness of more than 100 millions of people in the United States and Canada.

—Franklin H. Martin, M.D., Chicago, Ill.

Pome

The shades of night were falling fast,
A psychopathic nut rushed past;
What made him have that hollow sound?
They opened up his head and found
—Excelsior.

The shades of night were falling fast,
His fast was ended now at last.
They posted him; his skull was sound,
But shredded wheat was all they found.
—Excelsior.

The shades of night were falling fast,
Joy riders in their car rushed past;
Their drink would melt both snow and ice,
'Twas made of fresh though strange device.
—Excelsior.

The shades of night were pulled down fast;
John Barleycorn had breathed his last.
The mourners winked as mourners will.
Came spirit taps: "I'm with you still.'
—Excelsior.

H. N. J.
